

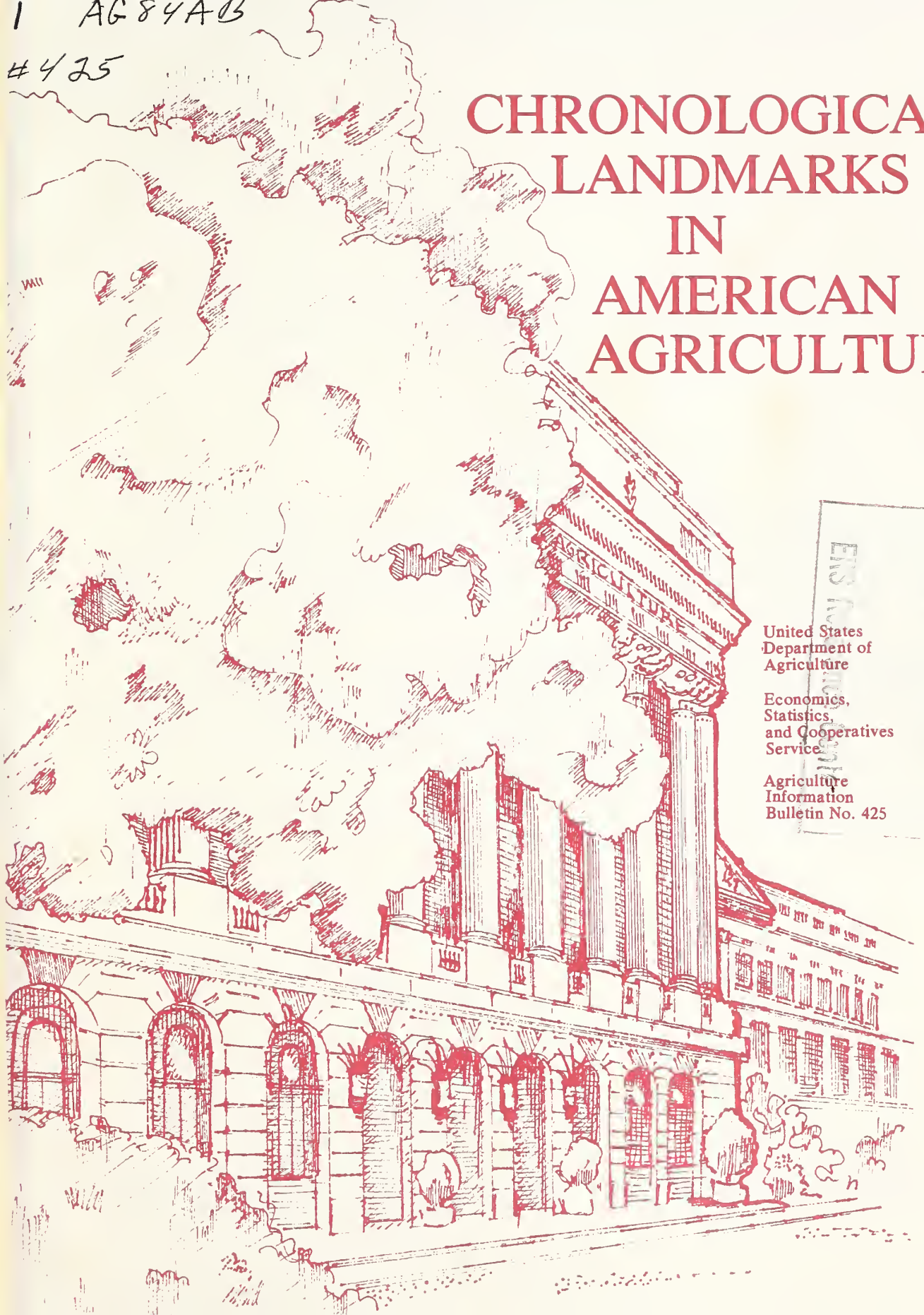
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CHRONOLOGICAL LANDMARKS IN AMERICAN AGRICULTURE



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CHRONOLOGICAL LANDMARKS IN AMERICAN AGRICULTURE

Compiled by
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INTRODUCTION

This chronology lists major events in the history of U.S. agriculture. A source to which the reader may turn for additional information on the subject is included with most of the events. Generally, each source appears only once, although it may apply to more than one chronological citation. The reader interested in a particular subject can compile a short bibliography by consulting each citation for that subject.

Key inventions, laws, changes in land policies, individuals, contributions, the development of institutions, and the introduction of new types of crops and livestock are included. There are also notes on all commissioners, secretaries of agriculture, and agencies established in response to new programs in the U.S. Department of Agriculture. Usually, published sources available in many libraries are cited as references, especially Yearbooks of Agriculture and Agricultural History.

The index is by subject and refers to the page on which a particular chronological item appears. Most subjects are specific rather than general. All persons mentioned in the chronology, except the authors of bibliographical citations, are listed in the index.

*The compiler is a historian with the National Economics Division in the Economics, Statistics, and Cooperatives Service.

CHRONOLOGY

8000 B.C. Animals were tamed and grain was domesticated in the Middle East.

(Wayne D. Rasmussen, "Valley to Valley, Country to Country," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 1-11.)

1493. Christopher Columbus introduced yearling calves, goats, sheep, pigs, hens, seeds of oranges, limes, melons, and many kinds of vegetables into the New World. (Richard J. Morrissey, "Colonial Agriculture in New Spain," Agricultural History 31:24-29. July 1957.)

1530. About this date the Spanish began using the branding iron to mark livestock in colonial America. (William Dusenberry. The Mexican Mesta; The Administration of Ranching in Colonial Mexico. Urbana, Ill.: University of Illinois Press, 1963. 253 pp. index.)

1532. The Spanish Government ordered that every ship sailing to America carry seeds, plants, and domesticated animals. (Arthur P. Whitaker, "The Spanish Contribution to American Agriculture," Agricultural History 3:1-14. Jan. 1929.)

1585. The potato was taken from South America to Spain. (F.I. Stevenson and C.F. Clark, "Breeding and Genetics in Potato Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1937, pp. 405-444.)

1607, June 3. English settlers at Jamestown, Virginia, sowed English grain, which failed. They also planted potatoes, pumpkins, melons, cotton, oranges, and pineapples. (L. C. Gray. History of Agriculture in the Southern United States to 1860. Vol. 1. Washington, D.C.: Carnegie Institution, 1933. 567 pp., index.)

1609. Settlers at Jamestown learned from Indians how to grow corn. (Lyman Carrier. Agriculture in Virginia, 1607-1699. Williamsburg, Va.: The Virginia 350th Anniversary Celebration Corporation, 1957. 40 pp.; biblio., app.)

1609. The first sheep to reach the English colonies were brought to Jamestown. (L. G. Connor, "A Brief History of the Sheep Industry in the United States," Agricultural History Society Papers 1:93-197, 1921.)

1612. John Rolfe of Jamestown grew Orinoco or a similar tobacco from seed probably obtained from the West Indies. In 1613, he shipped his crop to London, where it was well received. (Melvin Herndon. Tobacco In Colonial Virginia; "The Sovereign Remedy". Williamsburg, Va.: The Virginia 350th Anniversary Celebration Corporation, 1957. 53 pp.)

1614. Governor Sir Thomas Dale of Virginia allotted 3-acre holdings to settlers in Virginia as supplement to communal system. (W. Stitt Robinson, Jr. Mother Earth Land Grants In Virginia, 1607-1699. Williamsburg, Va.: The Virginia 350th Anniversary Celebration Corporation, 1957. 77 pp., biblio.)

1618. Head right system of granting 50 acres of land for every colonist transported or migrating into the colony began in Virginia. The practice spread to other colonies. (Marshall Harris. Origin of the Land Tenure System in the United States. Ames, Ia.: The Iowa State College Press, 1953. 445 pp., biblio., index.)

1619. The first Negroes arrived at Jamestown and were sold as indentured servants. Many eventually became slaves on agricultural plantations. (Paul S. Taylor, "Plantation Laborer Before the Civil War," Agricultural History 28:1-21. Jan. 1954.)

1619. Virginia began compulsory inspection of tobacco with the aim of controlling production. (George K. Holmes, "Three Centuries of Tobacco," Yearbook of Agriculture, U.S. Dept. Agr., 1919, pp. 151-175.)

1621. Pilgrims at Plymouth, Massachusetts, were taught to grow corn by the Indian, Squanto. (William Bradford. History of Plymouth Plantation. Boston, Mass.: Little, Brown & Co., 1856. 100 pp., reprinted many times.)

1621, October 21. King James I ordered that all tobacco grown in Virginia be shipped to England. (Lawrence A. Harper. The English Navigation Laws: A Seventeenth-Century Experiment in Social Engineering. New York: Columbia University Press, 1939. 503 pp., index.)

1621, December. Fig trees brought from Bermuda reached Virginia by ship. (Ira J. Condit, "Fig History in the New World," Agricultural History 31:19-24. Apr. 1957.)

1623. The Virginia Assembly directed that mulberry trees be planted to encourage silk industry. (Nelson Klose, "Sericulture in the United States," Agricultural History 37:225-234. Oct. 1963.)

1625. Rye was grown by the Dutch settlers of New Netherland (New York). (C. R. Ball & others, "Oats, Barley, Rye, Rice, Grain Sorghums, Seed Flax and Buckwheat," Yearbook of Agriculture, U.S. Dept. Agr., 1922. pp. 469-568.)

1626. First flour mill in the colonies was built in New Amsterdam. (John Storck and Walter Dorwin Teague. Flour for Man's Bread: A History of Milling. Minneapolis, Minn.: University of Minnesota Press, 1952. 331 pp., illus.)

1629, June 7. The patroon system of large landholdings was established in New Netherland. (S. G. Nissenson. Patroon's Domain. New York State Hist. Assn. Ser. No. 5. New York: Columbia University Press, 1937. 416 pp., index.)

1632. Virginia enacted a law which required those who cultivated crops to protect their fields with some form of legal fence. This law serves as a model for fencing laws in many of the States today. (Earl W. Hayter, "Livestock-Fencing Conflicts in Rural America," Agricultural History 37:10-20. Jan. 1963.)

1640. Connecticut offered land bounties for the cultivation of wheat and ordered every family to plant hemp. (Wayne D. Rasmussen, "Experiment or Starve: The Early Settlers," Yearbook of Agriculture, U.S. Dept. Agr., 1975. pp. 10-14.)

1658. The Virginia Assembly offered a bounty to persons who would produce flax fiber of a certain value. Flaxseed was a staple article of export from New York by 1770. (A. C. Dillman, "Improvement in Flax," Yearbook of Agriculture, U.S. Dept. Agr., 1936. pp. 745-784.)

1669. A plant-testing garden was established at the Ashley River settlement in South Carolina. (Lyman Carrier. The Beginnings of Agriculture in America. New York: McGraw-Hill Book Co., 1923. 323 pp., biblio., index.)

1685. Rice was successfully planted for the first time in the Carolinas. (Kenneth L. Murray, "Grain, A Basic Food," Yearbook of Agriculture, U.S. Dept. Agr., 1964. pp. 118-125.)

1695. The cultivation of rice in South Carolina became commercialized, apparently as a result of the introduction of superior seed from Madagascar by A. S. Salley. (David Doar. Rice and Rice Planting in the South Carolina Low Country. Contributions from Charleston Museum, No. 8. E. Milby Burton, ed. Charleston, S.C.: Charleston Museum, 1936. 70 pp., illus.)

1710. The establishment of German farm settlements began in North Carolina. (William H. Gehrke, "The Ante-Bellum Agriculture of the Germans in North Carolina," Agricultural History 9:143-160. July 1935.)

1712. England offered a bounty for silk produced in America, which encouraged French settlers to produce it. (Arthur H. Hirsch, "French Influence on American Agriculture in the Colonial Period with Special Reference to Southern Provinces," Agricultural History 4:1-9. Jan. 1930.)

1719. Potatoes, which originated in the New World, were first grown in what is now the United States at Londonderry, New Hampshire, from stock brought from Ireland. (F. J. Stevenson and C. F. Clarke, "Breeding and Genetics in Potato Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1937. pp. 405-409.)

1730. Virginia required that all tobacco for export be inspected and graded at public warehouses. (L. C. Gray, "The Market Surplus Problems of Colonial Tobacco," Agricultural History 2:1-34. Jan. 1928.)

1731. Jethro Tull introduced the horse-drawn cultivator and seed drill into English farming. (G. E. Fussell. Jethro Tull: His Influence on Mechanized Agriculture. Reading, England: Osprey Pub. Ltd., 1973. 133 pp.)

1731. John Bartram established a botanical garden near Philadelphia, Pa. (Ernest Earnest. John and William Bartram: Botanists and Explorers. Philadelphia, Pa.: University of Pennsylvania Press, 1940. 187 pp., illus.)

1733. Molasses Act fixed high taxes on non-British West Indies molasses, rum, and sugar imported into the American Colonies. (Lawrence H. Gipson. The Coming of the Revolution, 1763-1775. New York: Harper & Brothers, 1954. 287 pp., biblio., index.)

1733. A public experimental garden was established in Savannah, Georgia. (James W. Holland, "The Beginning of Public Agricultural Experimentation in America," Agricultural History 12:271-298. July 1938.)

1735. Settlers at Frederica, Georgia, planted lucerne or alfalfa. (E. E. Edwards, "The Settlement of Grasslands," Yearbook of Agriculture, U.S. Dept. Agr., 1948. pp. 16-25.)

1742. Sugar cane was introduced into Louisiana from Santo Domingo by Jesuit priests, but production did not begin until 1795. (E. W. Brandes & others, "Sugar," Yearbook of Agriculture, U.S. Dept. Agr., 1923. pp. 151-228.)

1742. Eliza Lucas Pinckney established indigo as a commercial crop in South Carolina. (Clyde E. Woodall and William H. Faver, Jr., "Famous South Carolina Farmers," Agricultural History 33:138-141. July 1959.)

1743. The American Philosophical Society, the earliest society in the United States to promote scientific agriculture, was organized. (M. L. Wilson, "Survey of Scientific Agriculture," Proceedings of the American Philosophical Society 86:52-62. Sept. 1942.)

1747. Jared Eliot (1685-1763), of Connecticut, wrote the first of his "Essays upon Field Husbandry." (Rodney H. True, "Jared Eliot, Minister, Physician, Farmer," Agricultural History 2:185-212. Oct. 1928.)

1748, May 13. The British Parliament provided bounty for all indigo imported from the American Colonies. (Terry G. Sharrer, "The Indigo Bonanza in South Carolina, 1740-90," Technology and Culture 12:447-455. July 1971.)

1763, August 24. The New York City Common Council fixed prices for meat, fish, and dairy products sold in the public markets. (Thomas De Vol. The Market Book. Vol. 1. New York: The Author, 1862. 621 pp., index.)

1763, October 7. A Proclamation by the British Government closed the trans-Allegheny region to settlement. (Bernhard Knollenberg. Origin of the American Revolution. New York: Macmillan Company, 1960. 486 pp., notes, biblio., index.)

1764. The Sugar Act led to defiance of British rule in the British colonies. (Gilman M. Ostrander, "The Colonial Molasses Trade," Agricultural History 30:77-84. Apr. 1956.)

1766. Agricultural settlers moved into southwestern Pennsylvania, the first area west of the Appalachian Mountains to be settled. (Solon J. Buck, "Frontier Economy in Southwestern Pennsylvania," Agricultural History 10:14-24. Jan. 1936.)

1769. The orange was introduced into California, but the first orange grove was not planted until 1804 in the garden of San Gabriel Mission, California. (R. Louis Gentilcore, "Ontario, California and the Agricultural Boom of the 1880s," Agricultural History 34:77-87. Apr. 1960.)

1769, July 16. Spanish missionaries established the Mission San Diego de Alcalá in San Diego, California, and constructed a dam for crop irrigation. (Paul W. Gates, ed. California Ranches and Farms, 1846-1862. Madison, Wis.: University of Wisconsin Press, 1967. 231 pp., index.)

1774, February 3. Great Britain issued regulations for granting land in the American Colonies which antagonized many settlers. (St. George L. Sioussat, "The Breakdown of the Royal Management of Lands in the Southern Provinces, 1773-1775," Agricultural History 3:67-98. Apr. 1929.)

1775. The flour mills in Pennsylvania, Delaware, and Maryland were among the most advanced in the world. (Marc Egnal, "The Economic Development of the Thirteen Continental Colonies, 1720 to 1775," William and Mary Quarterly, 32:191-222. Apr. 1975.)

1776. Two resolutions recommending aid to agriculture were adopted by the Second Continental Congress. (Everett E. Edwards, "American Agriculture--The First 300 Years," Yearbook of Agriculture, U.S. Dept. Agr., 1940. pp. 171-276.)

1776. The Shakers, members of a distinct religious organization known as the United Society of Believers, founded the first community of the society in Watervliet, New York. They became well known for their agricultural improvements. (Russell H. Anderson, "Agriculture Among the Shakers, Chiefly at Mount Lebanon," Agricultural History 24: 113-120. July 1950.)

1776, July 4. The Declaration of Independence was proclaimed.

1777. Scythes, sickles, hoes, spades, shovels, plough-irons, cart boxes, and mill stones found a ready market in the United States. (Rodney C. Loehr, "The Influence of English Agriculture on American Agriculture, 1775-1825," Agricultural History 2:3-15. Jan. 1937.)

1780. A flour mill which operated automatically was invented by Oliver Evans. (Charles Howell and Allan Keller. The Mill at Philipsburg Manor Upper Mills and a Brief History of Milling. Tarrytown, N.Y.: Sleepy Hollow Restorations, 1977. 190 pp., illus., biblio., glossary, index.)

1780. Benjamin Franklin, while U.S. Ambassador to France, sent back soybean seed. It was not to succeed as a major crop until over a century later. (Knowles A. Ryerson, "Plant Introductions," Agricultural History 50:248-257. Jan. 1976.)

1780, October 10. The Continental Congress urged States to cede western lands to the Nation, with the pledge that these lands would be settled and admitted as States. (Roy M. Robbins. Our Landed Heritage; The Public Domain, 1776-1936. Lincoln, Nebr.: University of Nebraska Press, 1976. 503 pp., biblio., index.)

1783. Improved cattle, probably Shorthorns, were introduced. (Charles T. Leavitt, "Attempts to Improve Cattle Breeds in the United States, 1790-1860," Agricultural History 7:51-67. Apr. 1933.)

1784. James Small invented the iron plow in England. (G. E. Fussell, "Ploughs and Ploughing Before 1800," Agricultural History 40:177-186. July 1966.)

1785. The Philadelphia Society for the Promotion of Agriculture was founded. It was an example of the new spirit of scientific improvement. (Stevenson W. Fletcher. The Philadelphia Society for Promoting Agriculture, 1785-1955. Philadelphia, Pa.: Philadelphia Society for Promoting Agriculture, 1959. 105 pp., illus.)

1785. The South Carolina Society for Promoting and Improving Agriculture and Other Rural Concerns was organized. (Chalmers S. Murray. This Our Land: The Story of the Agricultural Society of South Carolina. Charleston, S.C.: Carolina Art Association, 1949. 285 pp., illus.)

1785. Sea Island cotton was reintroduced into Georgia from the Bahama Islands. (J. O. Ware, "Cotton Breeding and the Cotton Industry," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 658-670.)

1785, May 20. The Ordinance of 1785 established a plan for disposing of western lands. (Henry Tatter, "State and Federal Land Policy During the Confederation Period," Agricultural History 9:176-186. Oct. 1935.)

1786. Conscious attempts to breed jacks in the United States began with George Washington who received his first jack as a gift from the King of Spain the previous year for use in breeding mules. The value of the mule as a work animal was soon recognized. (James W. Whitaker, "A Venture in Jack Stock," Agricultural History 38:217-225. Oct. 1964.)

1786, January 25. In Shay's Rebellion, the farmers of western Massachusetts revolted against deflation and the financial policies of their Boston creditors. (Millard Hansen, "The Significance of Shay's Rebellion," South Atlantic Quarterly 39:305-317. July 1940.)

1787, July 13. The Ordinance of 1787 established a system for governing western lands. (Robert F. Berkhofer, Jr., "The Republican Origins of the American Territorial System." In: Allan G. Bogue and others, eds. The West of the American People. Itasca, Ill.: F. E. Peacock Publishers, 1970. 650 pp.)

1789. The first tariff act was passed. (Frank W. Taussig. Tariff History of the United States. 8th rev. ed. New York: Capricorn Books, 1964. 536 pp., index.)

1790-1820. The era of turnpike (tollroad) building improved communication and commerce between the settlements. (George Rogers Taylor. The Transportation Revolution, 1815-1860. New York: Rinehart & Co., 1951. 450 pp., illus., maps, index.)

1790. The settled area extended westward an average of 255 miles. With a total population of 3,929,214 in the United States, over 90 percent of all persons gainfully employed were engaged in agriculture. Many industrial functions, which were later to be taken over by factories, were at this time a regular part of the farm economy.

1790. Alexander Hamilton presented his "Report of a Uniform System for the Disposition of the Lands, the Property of the United States." (John D. Hicks & others. The Federal Union: A History of the United States to 1877. Boston, Mass.: Houghton Mifflin Co., 1970. 728 pp., biblio., apps., index.)

1790. The New England Farmer by Samuel Deane, which became a standard text on American agriculture, was published. (Angus McDonald. Early American Soil Conservationists. U.S. Dept. Agr., Misc. Pub. No. 449. Washington, D.C.: GPO, Oct. 1941. 63 pp.)

1792. The Old Farmer's Almanac was founded and published by Robert Bailey Thomas at Sterling, Massachusetts. It is one of the oldest surviving periodicals in the United States. (Clarence Saunders Brigham. Account of American Almanacs and Their Value for Historical Study. Reprinted from the proceedings of the American Antiquarian Society. Worcester, Mass.: The American Antiquarian Society, Oct. 1925. 25 pp.)

1793. Eli Whitney invented the cotton gin, which he patented on March 14, 1794. The machine led to cotton's becoming the chief cash crop of the South and to slavery's becoming more profitable. (Jeannette Mirsky and Allan Nevins. The World of Eli Whitney. New York: Macmillan & Co., 1952. 346 pp., illus., index.)

1793. Thomas Jefferson invented a moldboard for a plow based upon scientific principles. (August C. Miller, Jr., "Jefferson As An Agriculturist," Agricultural History 16:65-78. Apr. 1942.)

1793. The first Merino sheep were imported. (Carroll W. Pursell, Jr., "E. I. du Pont, Don Pedro, and the Introduction of Merino Sheep into the United States, 1801: A Document," Agricultural History 33:86-88. Apr. 1959.)

1794. In the Whiskey Rebellion, western farmers revolted against a grain tax on whiskey distilled from local grain. (David O. Whitten, "An Economic Inquiry into the Whiskey Rebellion of 1794," Agricultural History 49:491-504. July 1975.)

1794. The Philadelphia to Lancaster turnpike was opened. (Joseph A. Durrenberger. Turnpikes: A Study of the Toll Road Movement in the Middle Atlantic States and Maryland. Valdosta, Ga.: Southern Stationery & Print Co., 1931. 188 pp., notes, biblio.)

1795. Hemp production, subsidized by the Spanish Government, began in California. The subsidy was withdrawn in 1811. (Sanford A. Mosk, "Subsidized Hemp Production in Spanish California," Agricultural History 13:171-175. Oct. 1939.)

1796. The Land Act of 1796 authorized the sale of single sections of land. (B. H. Hibbard. A History of the Public Land Policies. New York: Macmillan & Co., 1924. 591 pp., index.)

1796, December 7. President George Washington recommended the creation of a national board of agriculture. (Everett E. Edwards, ed. Washington, Jefferson, Lincoln and Agriculture. Washington, D. C.: U.S. Dept. Agr., 1937. 102 pp., illus.)

- 1797, June 26. Charles Newbold of New Jersey received a patent for the first cast-iron plow. (Harris P. Smith. Farm Machinery and Equipment. 3d ed. New York: McGraw-Hill Book Co., 1955. 514 pp., illus., index.)
1798. John Chapman (Sept. 26, 1774-Mar. 18, 1845), known as Johnny Appleseed, planted his first apple-seed nursery in western Pennsylvania. (Robert Price. Johnny Appleseed: Man and Myth. Bloomington, Ill.: Indiana University Press, 1954. 320 pp., illus., biblio., index.)
1800. Commercial strawberry growing began near the largest cities. (George M. Darrow, "Strawberry Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1937, pp. 445-451.)
1800. The Virginia tobacco warehouse auction system was initiated. (Joseph Clarke Robert, "Rise of the Tobacco Warehouse Auction System in Virginia, 1800-1860," Agricultural History 7:170-182. Oct. 1933.)
1800. André Michaux, the French botanist, set out tea plants at Middleton Barony on the Ashley River some 15 miles from Charleston, South Carolina. (Nelson Klose, "Experiments in Tea Production in the United States," Agricultural History, 24:156-161. July 1950.)
1800. Total U.S. population reached 5,308,483.
1801. The refrigerator was invented by Thomas Moore of Maryland. (Oscar Anderson. Refrigeration in America: A History of a New Technology and Its Impact. Princeton, N.J.: Princeton University Press, 1953. 344 pp., index.)
1803. The Louisiana Territory was purchased from France with the U.S. Government acquiring complete sovereignty over the territory. (Marshall Harris, "How Our Rights in Land Came About," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 278-286.)
1803. George Washington Parke Custis inaugurated yearly competitions in sheep shearing and sheep and wool exhibitions at his Arlington, Virginia estate. (Rodney H. True, "The Early Development of Agricultural Societies in the United States," Agricultural History Society Papers 3:293-306. 1925.)
1804. James Mease wrote: "The soybean is adapted to Pennsylvania and should be cultivated." (W. J. Morse and J. L. Carter, "Improvement in Soybeans," Yearbook of Agriculture, U.S. Dept. Agr., 1937, pp. 1154-1163.)
- 1804, October. The first local agricultural fair was held in Washington, D. C., after the English fashion. (A. C. True, "Agricultural Education in the United States," Yearbook of Agriculture, U.S. Dept. Agr., 1899, pp. 157-190.)
1805. The first herd of corn-fed cattle was driven from the Ohio Valley over the mountains to eastern markets. (Paul C. Henlein, "Cattle Driving from the Ohio Country, 1800-1850," Agricultural History 28:83-95. Apr. 1954.)
1807. Seth Adams brought the first Merino sheet west of the Alleghenies to Muskingum County in Ohio. (Stephen L. Stover, "Early Sheep Husbandry in Ohio," Agricultural History 36:101-107. Apr. 1962.)
1809. William Jarvis introduced Merino sheep into New England. (Harold F. Wilson, "The Rise and Decline of the Sheep Industry in Northern New England," Agricultural History 9:12-40. Jan. 1935.)
1810. Total U.S. population reached 7,239,881.

1810. Nicolas Appert, a French confectioner, developed a process for canning food. (Georg Borgstrom, "Food and Agriculture in the Nineteenth Century." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. 1. New York: Oxford University Press, 1967. pp. 408-424, index.)

1810. Bermuda grass was being grown in the United States. (Homer L. Kerr, "Introduction of Forage Plants into Ante-Bellum United States," Agricultural History 38:87-95. Apr. 1964.)

1810. Cotton began to take the place of tobacco as the chief cash crop of the South. (Joseph C. Robert. The Story of Tobacco in America. Chapel Hill, N.C.: University of North Carolina Press, 1967. 296 pp., maps, illus., index.)

1810. "Associated," or cooperative, dairying had its beginning in Goshen, Connecticut. (J. Kenneth Samuels and Martin A. Abrahamsen, "Milestones in Cooperation," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 498-500.)

1810, July 4. The Agricultural Museum, the first farm periodical, began publication. (Claribel R. Barnett, "The Agricultural Museum: An Early American Agricultural Periodical," Agricultural History 2:99-102. Apr. 1928.)

1811. "The Merino Society of the Middle States of North America," was organized in the area of Delaware to protect and encourage wool growers and woolen manufacturers. (Carroll W. Pursell, Jr., "E. I. du Pont and Merino Mania in Delaware 1805-1815," Agricultural History 36:91-100. Apr. 1962.)

1811. The Berkshire Agricultural Society, which sponsored fairs for local farmers, was organized under the leadership of Elkanah Watson. (Hugh M. Flick, "Elkanah Watson's Activities on Behalf of Agriculture," Agricultural History 21:193-198. Oct. 1947.)

1811, May. The first Virginia State agricultural society, the Virginia Society for Promoting Agriculture, was organized. (Charles W. Turner, "Virginia State Agricultural Societies 1811-1860," Agricultural History 38:167-177. July 1964.)

1812, December 4. Peter Gaillard received a patent for a mowing machine. (Robert L. Ardrey. American Agricultural Implements. Chicago: The Author, 1894. 236 pp., reprinted.)

1813. John Lorain began discussing the value of cross-breeding corn to obtain high yields. (Henry A. Wallace and William L. Brown. Corn and Its Early Fathers. East Lansing, Mich.: Michigan State University Press, 1956. 134 pp., index.)

1815. The Pendleton Farmer's Society was formed in South Carolina. (Clyde E. Woodall and George H. Aull, "The Pendleton Farmer's Society," Agricultural History 31:36-37. Apr. 1957.)

1816, June 6. Ten inches of snow fell in New England, beginning "the year in which there was no summer." (David M. Ludlum. Early American Winters 1604-1820. Vol. 1. Boston, Mass.: American Meteorological Society, 1966. 285 pp.)

1817. Henry Clay of Kentucky imported the first Hereford cattle into the United States (George F. Lemmer, "The Spread of Improved Cattle Through the Eastern United States to 1850," Agricultural History 21:79-93. Apr. 1947.)

1817. Jersey cattle were reportedly imported into the United States. (R. R. Graves and M. H. Fohrman, "Superior Germ Plasm in Dairy Herds," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 997-1005.)

1818. Grasshoppers destroyed the crops of early settlers in the Red River Valley of Minnesota. (J. R. Parker, "Grasshoppers," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 595-604.)

1818. Morris Birkbeck and G. Flower established an English agricultural colony in Edwards County, Illinois. (Terry G. Jordan, "Between the Forest and the Prairie," Agricultural History 38:205-216. Oct. 1964.)

1818, September 30. A horticultural society was organized in New York. (Ulysses P. Hedrick. A History of Horticulture in America to 1860. New York: Oxford University Press, 1950. 551 pp., illus., notes, index.)

1819-21. A period of depression followed the temporary prosperity after the War of 1812.

1819. Peter Durand, an Englishman, introduced the tin can into America. (National Canners Association. The Canning Industry: Its History, Importance, Organization, Methods, and the Public Service Values of Its Products. 2d ed. Washington, D. C.: National Canners Association, 1954. 36 pp.)

1819. William Underwood established America's first successful food canning operation in Boston. (E. C. Hampe, Jr., and Merle Wittenberg. Lifeline of America: Development of the Food Industry. New York: McGraw-Hill Book Co., 1964. 390 pp., index.)

1819. Mediterranean wheat, resistant to the Hessian fly, was introduced and widely grown, although its red bran made it unpopular with millers. (Carleton R. Ball, "The History of American Wheat Improvement," Agricultural History 4:48-71. Jan. 1930.)

1819. The Plough Boy began publication. (Albert L. Demaree. The American Agricultural Press, 1819-1860. New York: Columbia University Press, 1941. 430 pp., illus., notes, biblio., index.)

1819, February 22. Florida and other lands were acquired by a treaty with Spain. (Dorothy O. Johannsen and Charles M. Gates. Empire of the Columbia: A History of the Pacific Northwest. New York: Harper & Bros., 1957. 666 pp., index.)

1819, March 26. Secretary of the Treasury William H. Crawford asked U.S. consuls abroad to introduce valuable new plants. (Nelson Klose. America's Crop Heritage. Ames, Ia.: Iowa State College Press, 1950. 156 pp., notes, biblio., index.)

1819, April 2. The American Farmer, the first farmers' periodical to attain wide circulation, began publication. (Harold T. Pinkett, "The American Farmer, A Pioneer Agricultural Journal, 1819-1834," Agricultural History 24:146-151. July 1950.)

1819, April 7. The New York State Board of Agriculture was established by the State legislature. (Ulysses Prentiss Hedrick. A History of Agriculture in the State of New York. New York: Hill and Wang, 1933. 465 pp., illus., biblio., index.)

1819, September 1. Jethro Wood patented an iron plow with interchangeable parts. (Stuart Bruchey. The Roots of American Economic Growth: An Essay in Social Causation, 1607-1861. New York: Harper & Row, 1968. 234 pp., biblio., index.)

1820. Total U.S. population reached 9,638,453; 72 percent of persons gainfully employed were engaged in agriculture.

1820, March 9. The Land Law of 1820 was passed. Among its most prominent features were the discontinuation of the credit system and the reduction of the minimum price of lands from \$2.00 to \$1.25 an acre. (Hugh C. Bailey, "John W. Walker and the Land Laws of the 1820's," Agricultural History 32:120-126. Apr. 1958.)

1821. Edmund Ruffin, America's first soil scientist, published a version of his "Essay on Calcareous Manures," as an article in the American Farmer. It was expanded and published as a book in 1832. (Avery Craven. Edmund Ruffin, Southerner: A Study in Secession. New York: D. Appleton & Co., 1932. 283 pp., illus., index.)

1822-1825. About 50 to 60 man-hours of labor were required to produce 1 acre (20 bushels) of wheat with a walking plow, a bundle of brush for harrow, hand broadcast of seed, harvesting by sickle, and threshing by flail. (Compare with labor requirements about 1890 and about 1930.)

1822-1825. Poland-China and Duroc-Jersey swine were being developed. (Charles W. Towne and Edward N. Wentworth. Pigs From Cave to Corn Belt. Norman, Okla.: University of Oklahoma Press, 1950. 305 pp., biblio., index.)

1823. The Berkshire hog, first imported from England by John Brentnall, an immigrant farmer who settled in Orange County, New York, was widely accepted. (Clarence H. Danhof. Change in Agriculture: The Northern United States, 1820-1870. Cambridge, Mass.: Harvard University Press, 1969. 322 pp., biblio., index.)

1823. A revolving hay rake was patented by Samuel Pennock. (Clarence H. Danhof, "Gathering the Grass," Agricultural History 30:169-173. Oct. 1956.)

1825. The Erie Canal was opened, permitting the shipment of wheat from the West to New York at low cost. (Neil Adams McNall. An Agricultural History of the Genesee Valley, 1790-1860. Philadelphia, Pa.: University of Pennsylvania Press, 1952. 276 pp., notes, biblio., index.)

1825. Thomas Kensett secured a patent on the use of tin cans in preserving food. (C. N. McBryde, "Commercial Methods of Canning Meats," Yearbook of Agriculture, U.S. Dept. Agr., 1911, pp. 383-390.)

1825, December 9. The Committee on Agriculture and Forestry of the United States Senate was created. (U.S. Congress. Senate. 91st Cong., 2d Sess. A Brief History of the Committee on Agriculture and Forestry, United States Senate and Landmark Agricultural Legislation, 1825-1970. Washington, D. C.: GPO, 1970. 52 pp.)

1827. The first issue of the New York Farmer appeared. It was inaugurated by the New York Horticultural Society. (Albert L. Demaree. The American Agricultural Press, 1819-1860. New York, N.Y.: Columbia University Press, 1941. 408 pp., biblio., index.)

1828. The Southern Agriculturist began publication in Charleston, S.C. (Clement Eaton. The Growth of Southern Civilization, 1790-1860. New York, N.Y.: Harper & Row, 1961. 357 pp., index.)

1828. The "Tariff of Abominations" was enacted. This was an extremely high protective tariff sponsored by the Jacksonians as a political move and by the woolen interests. It was opposed by the South. (Margaret L. Coit. John C. Calhoun: American Portrait. Boston, Mass.: Houghton Mifflin Co., 1950. 593 pp., illus., index.)

1829. The first organized flower show was held in Boston.

1830-1840. The development of the reaper, the steel plow, the threshing machine, and other farm implements during this period involved changes in economic and social organization as well as in technology. Large amounts of capital required for the efficient production of the new machinery shifted the manufacture of farm implements from local blacksmith shops into specialized factories. Moreover, as farmers gradually found it economically advantageous to make the heavy capital investment necessary for the new machines, their need for cash and their dependence upon the market increased. (Earle D. Ross, "Retardation in Farm Technology Before the Power Age," Agricultural History 30:11-18. Jan. 1956.)

1830. James Ronaldson of Philadelphia made the first attempt to establish sugarbeets in the United States. He was also instrumental in establishing the Beet Sugar Society of Philadelphia. (John C. Scholl and Leslie C. Hurt, "Sugar and Other Sweeteners," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 177-184.)

1830. Robert McCormick, father of Cyrus, invented a power hemp break. (G. Melvin Herndon, "Hemp in Colonial Virginia," Agricultural History 37:86-93. Apr. 1963.)

1831. The first issue of the Genessee Farmer was published. (Frank L. Mott. A History of American Magazines, 1741-1850. Vol. 1. Cambridge, Mass.: Harvard University Press, 1938. 649 pp., index.)

1831. Many schools and colleges began to offer courses in agriculture and sciences helpful to agriculture. (Clarence H. Danhof. Change in Agriculture: The Northern United States, 1820-1870. Cambridge, Mass.: Harvard University Press, 1969. 322 pp., biblio., index.)

1831. Cyrus H. McCormick invented his grain reaper in Virginia. The McCormick reaper reduced the workload of farmers harvesting grain, enabling them to expand their operations. A patent was granted on June 21, 1834. (W. T. Hutchinson. Cyrus Hall McCormick. 2 vols. New York: Century Co., 1930-1935.)

1833. John Lane, an Illinois blacksmith, began to manufacture steel plows. (Reynold M. Wik, "Mechanization of the American Farm." In: Melvin Kranzberg and Carrol W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. pp. 353-368.)

1833. Edmund Ruffin of Virginia established the Farmer's Register. (George F. Lemmer, "Early Agricultural Editors and Their Farm Philosophies," Agricultural History 31:3-22. Oct. 1957.)

1833, December 31. Obed Hussey patented a successful horse-drawn grain reaper. (Alan L. Olmstead, "The Mechanization of Reaping and Mowing in American Agriculture, 1833-1870," Journal of Economic History 35:327-352. June 1975.)

1834. The first issue of the Cultivator, published by Jesse Beul, appeared. (Harry J. Carman, "Jesse Buel, Albany County Agriculturist," New York History 14:241-249. July 1933.)

1834. Principle of mechanical refrigeration was developed by Jacob Perkins. (A. Lloyd Ryall, "The Storage of Farm Crops," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 303-308.)

1836. The State of Massachusetts passed the first law in this country prohibiting adulteration of milk. (Edwin L. Ruppert and Frank W. Mackison, "Public Health Programs," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 306-311.)

1836. The first recorded auction sale of livestock was held in Ohio. (C. G. Randell and L. B. Mann. Livestock Auction Sales in the United States. U.S. Dept. Agr., Farm Credit Administration Bull. No. 35. Washington, D.C.: GPO, 1939. 116 pp., illus., tables, diagrams.)

1836. Henry L. Ellsworth, Commissioner of the newly created Patent Office, on his own initiative began to distribute seeds and plants by means of the franking privilege of cooperating Congressmen. (Harold T. Pinkett, "Records of the First Century of Interest of the United States Government in Plant Industries," Agricultural History 29:30-45. Jan. 1955.)

1836, June 28. The grain combine was patented by Hiram Moore and J. Hascall. (Hal F. Higgins, "John M. Horner and the Development of the Combined Harvester," Agricultural History 32:14-24. Jan. 1958.)

1837. A financial panic marked by the end of the land-speculation boom, continued as a depression for several years. (Thomas C. Cochran and William Miller. The Age of Enterprise. New York: Harper & Row, 1961, revised. 396 pp., index.)

1837. Samuel F. B. Morse developed the first practical telegraph machine and filed for a patent. (Carleton Mabree. The American Leonardo: The Life of S. F. B. Morse. New York: Alfred A. Knopf, 1943. 420 pp., index.)

1837. John Deere began manufacturing plows with steel share and smooth wrought iron moldboard in Illinois. (Edward C. Kendall. John Deere's Steel Plow. Paper No. 2. Contributions from the Museum of History and Technology, United States National Museum Bull. No. 218. Washington, D. C.: Smithsonian Institution, 1959:15-25.)

1837, June 28. A practical threshing machine was patented by the Pitts Brothers. (Paul H. Johnstone, "Old Ideals Versus New Ideas in Farm Life," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 111-170.)

1838. The first beet sugar factory was erected at Northampton, Massachusetts. (Leonard J. Arrington, "Science, Government, and Enterprise In Economic Development: The Western Beet Sugar Industry," Agricultural History 41:1-18. Jan. 1967.)

1838, July 7. A law was approved granting land in Florida to Henry Perrine for a tropical plant introduction garden. (Marguerite Gilstrap, "The Greatest Service to Any Country," Yearbook of Agriculture, U.S. Dept. Agr., 1961, pp. 18-27.)

1839, March 3. Congress appropriated \$1,000 to the Patent Office for collecting agricultural statistics, conducting agricultural investigations, and distributing seeds. (Walter H. Ebling, "Why the Government Entered the Field of Crop Reporting and Forecasting," Journal of Farm Economics 21:718-734. Nov. 1939.)

1839, March 12. The double-row, horse-drawn corn planter was patented by D. S. Rockwell. (Lillian Church. History of Corn Planters. U.S. Dept. Agr., Bur. Agr. Chemistry and Engineering, Div. Mechanical Equipment, Inf. Ser. No. 69. Washington, D.C. Oct. 1935. 11 pp., illus.)

1840. Liebig's Agricultural Chemistry appeared. It had a great influence on scientific thought and on agricultural experimentation in Europe and the United States. (Margaret W. Rossiter, The Emergency of Agricultural Science: Justus Liebig and the Americans, 1840-1880. Yale Studies in the History of Science and Medicine No. 9. New Haven, Conn.: Yale University Press, 1975. 275 pp., biblio., index.)

1840. For the first time, the census included 37 questions on agriculture. (Walter H. Ebling, "Development of Government Data Systems in American Agriculture," Agricultural History 33:51-57. Apr. 1959.)

1840. Total U.S. population reached 17,069,453; farm population, 9,012,000 (estimated); 69 percent of persons gainfully employed were engaged in agriculture.

1841. The first crop reports were issued but were discontinued after 1850. (S. R. Newell and S. T. Warrington, "Facts for Decision," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 530-535.)

1841. New York held the first major state agricultural fair. (Wayne Caldwell Neely, The Agricultural Fair. New York: Columbia University Press, 1935. 313 pp., index.)

1841. The Preemption Act, providing for the sale of previously settled public lands at \$1.25 an acre to the original settlers, was passed. (Paul V. Maris, "Farm Tenancy," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 887-906.)

1841, March 12. An improved hoe drill for sowing grain was patented by Moses and Samuel Pennock. (Russell H. Anderson, "Grain Drills Through Thirty-Nine Centuries," Agricultural History 10:157-205. Oct. 1936.)

1842. The first grain elevator was constructed in Buffalo, New York, by Joseph Dart. (Guy A. Lee, "The Historical Significance of the Chicago Grain Elevator System," Agricultural History 2:16-32. Jan. 1937.)

1842. The first shipment of milk by rail was made as an experiment, which proved satisfactory and was continued. (C. W. Larson, "The Dairy Industry," Yearbook of Agriculture, U.S. Dept. Agr., 1922, pp. 281-394.)

1842. Thomas Affleck began publishing instructive farmers almanacs. (Robert W. Williams, "Thomas Affleck: Missionary to the Planter, the Farmer, and the Gardener," Agricultural History 31:40-48. July 1957.)

1843. Henry W. Vick developed a hybrid cotton seed known as the "Hundred Seed" which resulted in developing other improved varieties. (John Hebron Moore, "Cotton Breeding in the Old South," Agricultural History 30:95-104. July 1956.)

1843. First commercial shipment of Peruvian guano to the United States arrived in Baltimore although samples had been introduced as early as 1824. (Weymouth T. Jordan, "The Peruvian Guano Gospel in the Old South," Agricultural History 24:211-221. Oct. 1950.)

1843. Sir John Lawes founded the commercial fertilizer industry by developing and patenting a process for making superphosphate. (William H. Ross and Arnon L. Mehring, "Mixed Fertilizers," Yearbook of Agriculture, U.S. Dept. Agr., 1938, pp. 522-545.)

1844. First of a series of patents was granted to William F. Ketchum for mowing machines. (Wayne D. Rasmussen, "Jefferson, Washington...and Other Farmers," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 15-22.)

1844, October 2. A grain header was patented by George Easterly. (Lillian Church, Partial History of the Development of Grain Harvesting Equipment. U.S. Dept. Agr., Bur. Plant Industry, Series No. 72. Washington, D.C. Oct. 1947. 56 pp., illus.)

1845. The potato famine in Ireland brought a tremendous influx of immigrants to the United States. (Raymond P. Christensen, "Man's Historic Struggle for Food," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 2-15.)

1846. The first herd book for Shorthorns was compiled. (Charles Sumner Plumb. Types and Breeds of Farm Animals. Boston, Mass.: Ginn & Co., 1906. 563 pp., illus., index.)

1846. The Oregon Question was settled, thus adding new agricultural land to the United States. This territory became the States of Washington, Oregon, and Idaho. (Frederick Merk. The Oregon Questions. Cambridge, Mass.: Belknap Press, 1967. 427 pp., maps, index.)

1846. Robert Reid developed a new variety of corn known as "Reid's Yellow Dent" which eventually dominated the Corn Belt. (Wayne D. Rasmussen, "Lincoln and the Liberation of the Man on the Land," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 23-30.)

1846. In the 1840's and 1850's, Herefords, Ayrshires, Galloways, Jerseys, and Devons were being imported and bred. (Raymond B. Becker. Dairy Cattle Breeds: Origin and Development. Gainesville, Fla.: University of Florida Press, 1973. 554 pp., index.)

1846. Commercial corn and wheat belts began to develop. Wheat occupied the newer and cheaper areas and was constantly being forced westward by rising land values and the encroachment of corn; however, New York, Pennsylvania, and Ohio were still the chief wheat-producing States. (John G. Clark. Grain Trade of the Old Northwest. Urbana, Ill.: University of Illinois Press, 1966. 324 pp., index.)

1846, March 27. The first free homestead bill was introduced in the Congress and was defeated. (George M. Stephenson. Political History of the Public Lands from 1840 to 1862, From Preemption to Homestead. Boston, Mass.: R. G. Badger, 1917. 296 pp. biblio.)

1846, June 26. Great Britain repealed the Corn Laws, greatly increasing exports of agricultural products from the United States. (Frederick Merk, "The British Corn Crisis of 1845-1846 and the Oregon Treaty," Agricultural History 8:95-123. July 1934.)

1846, August 3. The law establishing the Board of Equitable Adjudication was enacted. (George L. Anderson, "The Board of Equitable Adjudication, 1846-1930," Agricultural History 29:65-72. Apr. 1955.)

1846, September 10. A patent for a sewing machine was taken out by Elias Howe. In 1850, a competitor, Isaac M. Singer, marketed the first practical machine with interchangeable parts in the United States. (Ruth Brandon. A Capitalist Romance: Singer and the Sewing Machine. Philadelphia, Pa.: J. P. Lippincott Co., 1977. 244 pp., index, biblio.)

1847, July 23. Mormons, members of the Church of Jesus Christ of Latter-Day Saints, began modern irrigation agriculture near present-day Salt Lake City, Utah. (L. J. Arrington. Great Basin Kingdom. Cambridge, Mass.: Harvard University Press, 1958. 534 pp., index.)

1847, September 10. The revolving disk harrow was patented by George Page. (R. C. Ingersoll, "The Development of the Disk Plow," Agricultural Engineering 7:172-175, illus. 1926.)

1848. A continuous railroad between Cincinnati and Sandusky was completed, thus helping to create the corn belt in Illinois. (Paul C. Henlein, "Early Cattle Ranges of the Ohio Valley," Agricultural History 35:150-154. July 1961.)

1848, February 2. Territory comprising the future States of Arizona, California, Nevada, New Mexico, Utah, and parts of Colorado and Wyoming were ceded to the United States by Mexico. (R. H. Allen, "The Spanish Land Grant System as an Influence in the Agricultural Development of California," Agricultural History 9:127-142. July 1935.)

1848, April 3. The Chicago Board of Trade, the oldest futures market in the United States, was organized to accommodate a rapidly expanding cash grain crop. (J. M. Mehl, "The Futures Market," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 323-331.)

1849. Jonathan Turner of Illinois began to campaign for "industrial universities," a part of the long struggle for popular and agricultural education which culminated in passage of the Land Grant College Act in 1862. (George D. Merrill, "Jonathan Turner or Justin Morrill: A New Look at the Authorship of the Land Grant Act of 1862," Vermont History. Vol. 36. Autumn 1968.)

1849. The first poultry exhibition in the United States was held in Boston. (M. A. Jull, "Superior Breeding Stock in Poultry," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 947-995.)

1849. James B. Davis introduced Angora goats from Turkey into the United States. (James C. Bonner, "The Angora Goat: A Footnote in Southern Agricultural History," Agricultural History 21:42-46. Jan. 1947.)

1849. The gold rush brought thousands of "forty-niners" into California, which stimulated the State's agriculture. The California government offered rewards for many agricultural products. (Edward D. Branch. Westward: The Romance of the American Frontier. New York: D. Appleton & Co., 1930. 627 pp., index.)

1849, March 3. The Patent Office was transferred from the State Department to the newly created Interior Department. The principal agricultural functions of the Patent Office were distributing free seeds and collecting agricultural statistics. (Henry B. Learned. The President's Cabinet: Studies in the Origin, Formation, and Structure of an American Institution. New Haven, Conn.: Yale University Press, 1912. 471 pp., index.)

1850-56. About 30 to 35 man-hours of labor were required to produce 1 acre of corn (40 bushels) using a walking plow and a harrow and planting by hand.

1850-56. Alfalfa was grown on the west coast. (George W. Hendry, "Alfalfa in History," Journal of American Society of Agronomy 15:171-176. May 1923.)

1850. A farm family moving to the Western Prairies needed about \$1,000 to establish a 160-acre farm. (Clarence H. Danhof, "Farm-making Costs and the 'Safety Valve': 1850-60," Journal of Political Economy 49:317-359. June 1941.)

1850. Moore's Rural New Yorker, published in Rochester, New York, was regarded as informative and useful to farmers. (Kathleen A. Smith, "Moore's Rural New Yorker: A Farm Program for the 1850's," Agricultural History 45:39-46. Jan. 1971.)

1850. Manufactured guano, first mixed fertilizer, was produced commercially in Baltimore, Maryland. (Malcolm H. McVicker. Using Commercial Fertilizer; Commercial Fertilizers and Crop Production. 2d ed. Danville, Ill.: Interstate Printers & Publishers, Inc., 1961. 286 pp., app., index.)

1850. Antagonisms between the industrial North and the plantation South became steadily more intense. (E. Merton Coulter, "Southern Agriculture and Southern Nationalism Before the Civil War," Agricultural History 4:77-91. July 1930.)

1850. Farmers were almost unanimous in their support of railroads and the benefits resulting from this new and speedy method of transportation. (Mildred Throne, "Suggested Research on Railroad Aid to the Farmer, With Particular Reference to Iowa and Kansas," Agricultural History 31:50-56. Oct. 1957.)

1850. Total U.S. population reached 23,191,876; farm population, 11,680,000 (estimated); 64 percent of persons gainfully employed were engaged in agriculture.

1850, September. S. S. Rembert and J. Prescott of Memphis, Tennessee, were issued a patent on a mechanical cotton picking machine. (Frank J. Welch and D. Gray Miley, "Mechanization of the Cotton Harvest," Journal of Farm Economics 27:928-946. Nov. 1945.)

1850, September 20. The first Federal grant of public land for railroad construction was made. (Paul W. Gates. The Illinois Central Railroad and Its Colonization Work. Cambridge, Mass.: Harvard University Press, 1934. 374 pp., illus., maps, index.)

1851. Butter was moved successfully in refrigerator cars by railroad from northern New York to Boston.

1851, May. The first cooperative cheese factory was organized by Jesse Williams on his farm in Oneida County near Rome, New York. (H. E. Erdman, "The 'Associated Dairies' of New York as Precursors of American Agricultural Cooperatives," Agricultural History 36:82-90. Apr. 1962.)

1851, September 10. A patent for mechanical refrigeration was issued to John Gorrie. (Ray J. Dossat. Principles of Refrigeration. New York: Wiley & Co., 1961. 544 pp., index, illus.)

1852. The discovery of "coal oil" distilled from coal tar, the trade name for "kerosene" was used for burning in lamps. By 1859, kerosene lamps were making their way into American homes. (Daniel J. Boorstin. The Americans: The Democratic Experience. New York: Random House, 1973. 717 pp., bio. notes, index.)

1852. The first livestock shipment by rail occurred; however, no provision was made for feeding, watering, or ventilating. (E. Z. Russell and others, "Hog Production and Marketing," Yearbook of Agriculture, U.S. Dept. Agr., 1922, pp. 181-280.)

1852, June 24. The United States Agricultural Society was organized. (Lyman Carrier, "The United States Agricultural Society, 1852-1860," Agricultural History 11:278-288. Oct. 1937.)

1853. Sorgho, or sweet sorghum, was introduced into the United States from France. Earlier, sorghum had been imported from Africa by slave ship. (John H. Martin, "Sorghum Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 523-623.)

1853, January. The first copy of the American Polytechnic Journal appeared. (Paul W. Gates, "Charles Lewis Fleischmann: German-American Agricultural Authority," Agricultural History 35:13-23. Jan. 1961.)

1853, January. Noah B. Cloud began the publication of his journal, The American Cotton Planter, in Montgomery, Alabama. (Weymouth T. Jordan, "Noah B. Cloud and the American Cotton Planter," Agricultural History 31:44-49. Oct. 1957.)

1853, August 2. A patent for a widely used corn planter was granted to G. W. Brown. (John T. Schlebecker. Whereby We Thrive: A History of American Farming, 1607-1972. Ames, Iowa: The Iowa State University Press, 1975. 342 pp., index.)

1854. The homestead bill introduced into the Congress was defeated. (Gerald Wolff, "The Slavocracy and the Homestead Problem of 1854," Agricultural History 40:101-111 Apr. 1966.)

1854. Daniel Halladay of Ellington, Connecticut, invented a windmill. Large-scale production began about 1873. (Terry G. Jordan, "Windmills in Texas," Agricultural History 37:80-85. Apr. 1963.)

1854, December 5. A patent on a two-wheeled jointed bar mower with a cutting bar which could operate on rough and uneven ground was granted to Cryenus Wheeler. (Percy W. Bidwell and John I. Falconer. History of American Agriculture in the Northern United States, 1620-1860. Washington, D.C.: The Carnegie Institution of Washington, 1925. 512 pp., illus., maps, diagrams, index.)

1855-60. The average annual value of agricultural exports was \$229,371,600, or 82.4 percent of all exports.

1855, February 12. Michigan passed legislation providing for the establishment of the Michigan Agricultural College. (Frederick B. Mumford. The Land Grant College Movement. University of Missouri, College of Agriculture Bull. No. 419. Columbia, Missouri: Agricultural Experiment Station, 1940. 140 pp.)

1855, February 23. Pennsylvania Farmers' High School, later renamed Pennsylvania State College and now named Pennsylvania State University, was established by the State legislature but did not open its doors to students until February 16, 1859. (Alfred C. True. A History of Agricultural Education in the United States, 1785-1925. U.S. Dept. Agr., Misc. Pub. No. 36. Washington, D.C.: GPO, 1929. 436 pp.)

1856. Steam tractors were tried unsuccessfully. (Reynold M. Wik, "Steam Power on the American Farm, 1830-1880," Agricultural History 25:181-186. Oct. 1951.)

1856, March 6. The Maryland State legislature appropriated funds for the Maryland Agricultural College, which was opened to students on October 6, 1859. (Vivian Wiser, "Maryland in the Early Land-Grant College Movement," Agricultural History 36:194-199. Oct. 1962.)

1856, August 1. The Commission of Claims, or the Court of Claims as it was called, was approved to ascertain the legal claims for money and lands against the State of Texas. (Thomas L. Miller, "The Texas Court of Claims, 1856-1861," Agricultural History 34:35-40. Jan. 1960.)

1856, August 2. A two-horse straddle row cultivator was patented by George Easterly. (Albert H. Sanford. The Story of Agriculture in the United States. Boston, Mass.: D. C. Heath & Co., 1916. 394 pp., index.)

1856, August 19. A patent for condensing milk was issued to Gail Borden. (J. B. Frantz. Gail Borden: Dairyman to a Nation. Norman, Okla.: University of Oklahoma Press, 1951. 310 pp., index.)

1857. A commercial and financial panic developed. (Paul W. Gates, "The Homestead Law in Iowa," Agricultural History 38:67-78. Apr. 1964.)

1857. Wendelin Grimm, an immigrant from Germany, began acclimating alfalfa in Minnesota. (E. E. Edwards and H. H. Russell, "Wendelin Grimm and Alfalfa," Minnesota History 19:21-33. Mar. 1938.)

1857, May 14. The Michigan Agricultural College was opened to students. (Madison Kuhn. Michigan State: The First Hundred Years, 1855-1955. East Lansing, Mich.: Michigan State University Press, 1955. 501 pp.)

1858. Mason jars, used for canning, were invented. They were used only by the more affluent homemakers as hand-blown glass was expensive. (Jane M. Porter, "Home Food Preparation Undergoes Big Changes," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 250-260.)

1858. John W. Fawkes of Pennsylvania unveiled his 10-ton plow after 3 years of experimentation. (Clark C. Spence, "Experiments in American Steam Cultivation," Agricultural History 33:107-116. July 1959.)

1858. Although 1.5 million barrels of flour were received in New Orleans, the local grain trade began to decline as railroads and canals made the Atlantic ports available. (John G. Clark, "The Antebellum Grain Trade of New Orleans: Changing Patterns in the Relation of New Orleans with the Old Northwest," Agricultural History 38:131-142. July 1964.)

1858, August 17. A harvester which gathered grain into bundles was patented by Charles Wesley Marsh and his brother, William Wallach Marsh. (Merritt Finley Miller. The Evolution of Reaping Machines. U.S. Dept. Agr., Office of Experiment Stations Bull. No. 103. Washington, D.C.: GPO, 1902. 43 pp., illus.)

1859. The Great Atlantic and Pacific Tea Company (A&P), the largest food chain in the United States in 1954, began operations. (Paul D. Converse and Robert H. Cole, "The Chains as a Lesson in Marketing," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 67-70.)

1859, November 24. Darwin published Origin of the Species, which had a great influence on the biological sciences. (Julian S. Huxley and H. B. D. Kittlewell. Charles Darwin and His World. London, England: Thames Publishing Co., 1965. 144 pp., index.)

1860. Cultivation of Red Fife wheat, a hard red spring wheat and one of the parents of Marquis wheat, began in Wisconsin. (J. Allen Clark and B. B. Bayles. Classification of Wheat Varieties Grown in the United States. U.S. Dept. Agr., Tech. Bull. 459. Washington, D.C.: U.S. Dept. Agr., Apr. 1935. 164 pp., index.)

1860. Thirty thousand miles of railroad track were completed in the United States. (John F. Stover. American Railroads. Chicago, Ill.: University of Chicago Press, 1961. 310 pp., maps, biblio., index.)

1860. Slavery continued to be profitable in the plantation South. (L. C. Gray, "Economic Efficiency and Competitive Advantages of Slavery Under the Plantation System," Agricultural History 4:31-47. Apr. 1930.)

1860. Cattle driven to California as a result of demands of gold diggers numbered 2 million. (J. Orin Oliphant, "The Cattle Trade on Puget South, 1858-1890," Agricultural History 7:129-149. July 1933.)

1860. "Forest Trees of North America," a 30-page section of the annual report of the Agricultural Division of the Patent Office, was issued, listing kinds of trees and the effects of trees on soil, climate, and health. (J. G. Cooper and M. D. Hoboken, "The Forests and Trees of Northern America, As Connected with Climate and Agriculture." U.S. Congress. House Committee on Agriculture. Report of the Commissioner of Patents for the Year 1860. 36th Cong., 2d sess. Washington, D.C.: GPO, 1861, pp. 416-445.)

1860. The use of steamboats on western waters was largely instrumental in permitting a more profitable expansion of swine raising in the Middle West. (Charles T. Leavitt, "Transportation and the Livestock Industry of the Middle West to 1860," Agricultural History 8:20-33. Jan. 1934.)

1860. The South, with 42 percent of the improved land in the United States, produced 43 percent of the corn, 26 percent of the wheat, 36 percent of the dairy cattle, 54 percent of the hogs, 27 percent of the sheep, and 43 percent of the horses and mules--besides all the cotton, rice, and sugar, and nearly all the tobacco. (Fred A. Shannon. The Farmer's Last Frontier: Agriculture, 1860-1897. Economic History of the United States, Vol. 5. New York: Farrar & Rinehart, Inc., 1945. 434 pp., index.)

1860. Total U.S. population reached 31,443,321; farm population, 15,141,000 (estimated); 58 percent of persons gainfully employed were engaged in agriculture.

1861-65. Demand for food products led to commercialization of northern agriculture and a temporary diversification of southern agriculture, giving impetus to the first American agricultural revolution. (Ralph H. Gabriel. Toilers of Land and Sea. New Haven, Conn.: Yale University Press, 1926. 340 pp.)

1861. The first "creamery," or butter factory, was built by Alanson Slaughter, near Wallkill, Orange County, New York. (Henry E. Alvord, "Dairy Development in the United States," Yearbook of Agriculture, U.S. Dept. Agr., 1899, pp. 381-403.)

1861. The New York State Cheesemakers Association was organized with the purpose of exchanging information and experiences to promote the general interest of the dairying community. This organization later changed its name to the American Dairymen's Association. (Eric Brunger, "Dairying and Urban Development in New York State, 1850-1900," Agricultural History 29:169-174. Oct. 1955.)

1861, April. The Civil War began. It triggered the first American agricultural revolution. (Wayne D. Rasmussen, "The Civil War: A Catalyst of Agricultural Revolution," Agricultural History 39:187-195. Oct. 1965.)

1862-65. The exportation to Europe of grain produced in the North increased greatly, whereas the South temporarily could not export its cotton. (Robert H. Jones, "Long Live the King," Agricultural History 37:166-169. July 1963.)

1862. Southern agricultural leaders called upon planters to raise food crops rather than cotton. (E. Merton Coulter, "The Movement for Agricultural Reorganization in the Cotton South During the Civil War," Agricultural History 1:1-17. Jan. 1927.)

1862, May 15. President Abraham Lincoln signed the legislation which created the U.S. Department of Agriculture. (Gladys L. Baker and others. Century of Service: The First 100 Years of the United States Department of Agriculture. Washington, D.C.: GPO, 1963. 560 pp., index.)

1862, May 20. The Homestead Act was approved by President Lincoln. (Charles Plante and Ray H. Mattison, "The 'First' Homestead," Agricultural History 36:183-193. Oct. 1962.)

1862, July 1. Isaac Newton (Mar. 31, 1800-June 19, 1867) of Pennsylvania served as first Commissioner of Agriculture from July 1, 1862 to June 19, 1867. (Earle D. Ross, "The United States Department of Agriculture During the Commissionership," Agricultural History 20:129-143. July 1946.)

1862, July 1. An act was approved granting land to the Union Pacific Railroad Company and the Central Pacific Railroad Company in return for the construction of the trans-continental railroad. (Robert W. Fogel. The Union Pacific Railroad: A Case in Premature Enterprise. Johns Hopkins University Studies in Historical and Political Science. Baltimore, Maryland: Johns Hopkins University Press, 1960. 129 pp.)

1862, July 2. President Lincoln approved the Morrill Land-Grant College Act. (Earle D. Ross, "'Father' of the Land-Grant College," Agricultural History 12:151-186. Apr. 1938.)

1863. "Dry farming" in the United States, as a type of commercial agriculture, began in Utah. (O. R. Mathews and John C. Cole, "Special Dry-Farming Problems," Yearbook of Agriculture, U.S. Dept. Agr., 1938, pp. 676-692.)

1863, February 2. The U.S. Congress appropriated \$3,000 to purchase and distribute cotton and tobacco seed in the Northern States. (Paul W. Gates. Agriculture and the Civil War. New York: Alfred A. Knopf, 1965. 383 pp., footnotes, illus., index.)

1863, February 18. The Kansas State Agricultural College was established under the provisions of the Morrill Land-Grant College Act. (R. W. Sherman. Which Land-Grant College Was Number One? Manhattan, Kans.: Kansas State University Endowment Association, 1974. 12 pp.)

1863, July. The first monthly crop report describing the condition of a number of crops was issued by the newly established U.S. Department of Agriculture. (Glenn D. Simpson, "A 20,000-Mile Train Full of Corn, or Facts and Food," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 113-117.)

1864. Farmhands in Illinois were being paid from \$2.00 to \$5.00 a day in the harvest field. (Wood Gray. The Hidden Civil War. New York: Viking Press, 1942. 314 pp., index.)

1864, March 14. The Deficiency Act was passed providing the first statutory provision for the employment of women. (Gladys L. Baker, "Women in the U. S. Department of Agriculture," Agricultural History 50:190-201. Jan. 1976.)

1864, September 6. F. S. Davenport and Robert Newton patented a sulky plow in Illinois. (Leo Rogin. The Introduction of Farm Machinery in Its Relation to the Productivity of Labor in the Agriculture of the United States During the Nineteenth Century. Berkeley, Calif.: University of California Press, 1931. 200 pp., illus, index.)

1864, September 28. John Thompson and John Ramsey of Illinois patented a popular check row corn planter.

1865. Fish and poultry were frozen on a commercial basis, although modern quick-freezing methods were not pioneered by Clarence Birdseye until the early 1920's. (M. J. Copley and others, "The Processing of Food," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 454-459.)

1865. With the end of the Civil War, substantial shifts of crops from one area to another began in the South. (B. I. Wiley, "Salient Changes in Southern Agriculture Since the Civil War," Agricultural History 2:65-76. Apr. 1939.)

1865, March 3. The Freedman's Bureau was established and began efforts to develop a free labor system and to secure farms for the newly freed slaves. (Martin Abbott, "Free Land, Free Labor, and the Freedmen's Bureau," Agricultural History 30:150-156. Oct. 1956.)

1865, December 18. Slavery was abolished by the thirteenth amendment to the Constitution. (William H. Pease and Jane H. Pease. Black Utopia: Negro Communal Experiments in America. Madison, Wis.: State Historical Society of Wisconsin, 1963. 204 pp., notes, biblio., index.)

1865, December 25. Chicago's Union Stockyards opened. (Edward A. Duddy, "The Place of Terminal Markets," Yearbook of Agriculture, U.S. Dept. Agr., 1954: pp. 37-48.)

1866. Gregor Johann Mendel published Experiments in Plant Hybridization. (Hugo Iltis. Life of Mendel. New York: W. W. Norton & Co., 1932. 336 pp., index.)

1866. Charles Goodnight and Oliver Loving blazed the Goodnight-Loving Trail from Texas to Colorado via New Mexico to open markets for Texas cattle. (Lewis Atherton. The Cattle Kings. Bloomington, Ind.: Indiana University Press, 1961. 308 pp., illus., index.)

1866. George Ertel of Quincy, Illinois, invented a hay-baling press in which the power came from a horse attached to a rotating sweep. (Farm Implement News, 9(10): 17-22. Oct. 1888, illus.)

1866, June 21. The Southern Homestead Act became law. (Christie Farnham Pope, "Southern Homesteads for Negroes," Agricultural History 44:201-212. Apr. 1970.)

1866, July 28. An act legalizing the use of metric units which are still maintained today was passed. (E. C. Crittenden, "Units and Standards of Measurement," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 143-150.)

1867. Abilene, Kansas became the first "cowtown" where cattle driven from Texas to the railroad were shipped to Eastern markets. These shipments, planned by Joseph G. McCoy, came to an end in a few years. (Robert Dykstra, "The Last Days of Texas Abilene," Agricultural History 34:107-119. July 1960.)

1867. The first crude patent for barbed wire fencing was taken out by William D. Hunt of Scott County, New York. (Earl W. Hayter, "Barbed Wire Fencing--A Prairie Invention; Its Rise and Influence in the Western States," Agricultural History 13:189-207. Oct. 1939.)

1867. Asa Gray identified Lespedeza. (Paul Tabor, "The Early History of Annual Lespedeza in the United States," Agricultural History 35:85-89. Apr. 1961.)

1867. Sharecropping was adopted in many Southern States. (Oscar Zeichner, "The Transition from Slave to Free Agricultural Labor in the Southern States," Agricultural History 13:22-32. Jan. 1939.)

1867, June 20. John W. Stokes of Pennsylvania served as Acting Commissioner of Agriculture from June 20, 1867 to December 4, 1867, following the death of his uncle Isaac Newton. Stokes served until Horace Capron was appointed Commissioner.

1867, December 4. Oliver Hudson Kelley, an employee of the U.S. Department of Agriculture, organized the Patrons of Husbandry, later known as the National Grange. This was the first general farmers' organization to permit women to equality of membership and privilege. (William D. Barns, "Oliver Hudson Kelley and the Genesis of the Grange: A Reappraisal," Agricultural History 41:229-242. July 1967.)

1867, December 5. Horace Capron (Aug. 3, 1804-Feb. 22, 1885) of Illinois served as Commissioner of Agriculture from December 5, 1867 to July 31, 1871 (Merritt Starr, "General Horace Capron, 1804-1885," Illinois State Historical Society Journal 18:259-349. July 1925.)

1868. Crude wooden plows were used, sowing was done by hand, hoes were used for cultivating, hay and grain cutting was done with sickles, threshing was done with flails, and oxen and horses were used for power on many farms. (Rodney C. Loehr, "Farmers' Diaries: Their Interest and Value as Historical Sources," Agricultural History 12:313-325. Oct. 1938.)

1868. The first botanist was appointed in the U.S. Department of Agriculture. (John A. Stevenson, "Plants, Problems, and Personalities: The Genesis of the Bureau of Plant Industry," Agricultural History 28:155-162. Oct. 1954.)

1868, September 6. A refrigerator car widely used by railroads in the 1870's was patented by William Davis. (James E. Reynolds, "Industry: Profit and Protection," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 247-257.)

1868, November 14. The first farmers' institute was held at Mahattan, Kansas, to demonstrate improved methods to farmers. (R. V. Scott. The Reluctant Farmer: The Rise of Agricultural Extension to 1914. Urbana, Ill.: University of Illinois Press, 1970. 362 pp., index.)

1869. The first transcontinental railroad was completed. (Matthew Josephson. The Robber Barons. New York: Harcourt, Brace & World, Inc., 1962. 474 pp., biblio., index.)

1869. The gypsy moth was brought to the United States and accidentally established in Medford, Massachusetts. (John M. Corliss, "The Gypsy Moth," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 694-698.)

1869. The movement to consolidate country schools began in Massachusetts. (Clayton S. Ellsworth, "The Coming of Rural Consolidated Schools to the Ohio Valley, 1892-1912," Agricultural History 30:119-128. July 1956.)

1869. Fresh meat cooled by ice and salt was successfully shipped from Chicago to Boston in refrigerated railroad cars. (W. T. Pentzer, "The Giant Job of Refrigeration," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 123-138.)

1869. David Dickson published A Practical Treatise of Agriculture calling for reform in southern farming. (Chester McArthur Destler, "David Dickson's 'System of Farming' and Agricultural Revolution in the Deep South, 1850-1885," Agricultural History 31:30-39. July 1957.)

1869. Louis McMurray contracted with farmers near Frederick, Maryland, to raise corn, tomatoes, and peas for his canning factory. (J. Thomas Scharf. History of Baltimore City and County. Philadelphia, Pa.: Louis H. Everts, 1881:776-778.)

1869, February 2. A patent for a plow made of chilled iron was granted to James Oliver. (D. L. Meikle. James Oliver and the Oliver Chilled Plow Works. Ph.D. thesis. Bloomington, Ind.: Indiana University, 1958. 583 pp., index.)

1869, October 5. David L. Garver, of Michigan, patented the first practical spring-toothed harrow, which eliminated breaking teeth on roots and stones.

1869, November. W. O. Atwater published an analysis of corn. (Ernest G. Moore, "Men Who Went Before," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 1-16.)

1869, November 17. The Suez Canal opened to traffic. The opening, coupled with a period of peace in Europe and improved railroad connections with the Ukrainian wheat fields, marked the beginning of a change in European buying habits. (Douglas A. Farnie. East and West of Suez: The Suez Canal in History, 1854-1956. New York: Oxford University Press, Inc., 1969. 860 pp., index.)

1870-90. These were the years of the cattlemen on the Great Plains. (John T. Schlebecker. Cattle Raising on the Plains, 1900-1961. Lincoln, Nebr.: University of Nebraska Press, 1963. 323 pp., index.)

1870. The New York Cotton Exchange opened, followed by one in New Orleans a year later. (James E. Boyle. Cotton and the New Orleans Cotton Exchange: A Century of Commercial Revolution. Garden City, N.Y.: Country Life Press, 1934. 192 pp., index.)

1870. Edmund N. La Croix of Minneapolis developed a middlings purifier with a roller process for grinding. This advancement helped to produce a superior flour. (John Storck and Walter Dorwin Teague. Flour for Man's Bread: A History of Milling. Minneapolis, Minn.: University of Minnesota Press, 1952. 331 pp., illus., index.)

1870. Foot-and-mouth disease was first reported in the United States. (Manual A. Machado, Jr., "Aftosa and the Mexican-United States Sanitary Convention of 1928," Agricultural History 39:240-245. Oct. 1965.)

1870. The first monthly poultry publication, The Poultry Bulletin, was issued. (John L. Skinner, "Breeds." In: American Poultry History 1823-1973. Madison, Wis.: American Printing & Pub. Co., Inc., 1974. 775 pp., chronology, index.)

1870. Of all persons gainfully employed, 47.4 percent were engaged in agriculture. The 1870 census was the first which showed farmers as a minority among the gainfully employed.

1870, November 1. The first systematized, synchronous meteorological report ever taken in the United States was read and transmitted by telegraph. (F. H. Bigelow, "Work of the Meteorologist for the Benefit of Agriculture, Commerce, and Navigation," Yearbook of Agriculture, U.S. Dept. Agr., 1899, pp. 71-92.)

1871. A patent for a cotton stripper, also known in its early forms as a cotton sled or "sledder," was granted to John Hughes of New Berne, North Carolina. (James H. Street, "Mechanizing the Cotton Harvest," Agricultural History 31:12-22. Jan. 1957.)

1871. The Illinois Warehouse Act was the first important law regulating grain elevators. (Henrietta M. Larson. The Wheat Market and the Farmer in Minnesota, 1858-1900. New York: Columbia University Press, 1926. 273 pp., biblio., index.)

1871, January 7. The National Grange moved toward becoming a cooperative enterprise. (George Cerny, "Cooperation in the Midwest in the Granger Era, 1869-1875," Agricultural History 37:187-205. Oct. 1963.)

1871, April 7. The first Granger law regulating railroads and warehouses was passed in Illinois. (Solon J. Buck. The Granger Movement. Cambridge, Mass.: Harvard University Press, 1913. 384 pp., biblio., index.)

1871, August 1. Frederick Watts (May 9, 1801-August 17, 1889) of Pennsylvania served as Commissioner of Agriculture from August 1, 1871, to June 30, 1877. (T. Swann Harding. Some Landmarks in the History of the Department of Agriculture. U.S. Dept. Agr. Hist. Ser. 2. Washington, D.C.: U.S. Dept. Agr., Bur. Agr. Econ., 1951. 112 pp.)

1872. Aaron Montgomery Ward started the first mail order firm through handbills sent by mail. In 1874, he issued his first catalog (8 pages). (Theodore F. Marburg, "The Organization of Distribution and Marketing." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. pp. 77-91.)

1872. Luther Burbank produced the Burbank potato, the first of a long series of new or improved varieties of vegetables, fruits, and flowers. (F. J. Stevenson and C. F. Clark, "Breeding and Genetics in Potato Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1937, pp. 405-444.)

1872. The Congress recognized farmers' need for a weather service and asked the meteorological branch of the Army Signal Service to include "such additional stations, reports and signals as may be necessary for the benefit of agricultural and commercial interests." (Edward M. Vernon, "The Weather," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 433-436.)

1872. Yellowstone National Park was reserved as a "pleasuring ground." It was the beginning of the National Park system. (John Ise. Our National Park Policy: A Critical History. Baltimore, Md.: Johns Hopkins Press, 1961. 701 pp., index.)

1872, March 1. A constitution was adopted and officers were elected to the Elgin Board of Trade (Illinois) which was organized to find a better method of marketing dairy products and to eliminate need for the commission men. (Roy Ashmen, "Price Determination in the Butter Market: The Elgin Board of Trade, 1872-1917," Agricultural History 36:156-162. July 1962.)

1872, April 10. Arbor Day was instituted in Nebraska to stimulate tree planting in the prairie country. The observance of Arbor Day has since spread to every State and to many foreign countries. (James C. Olson. J. Sterling Morton. Lincoln, Nebr.: University of Nebraska Press, 1942. 451 pp., illus., index.)

1873-77. Black's Bend Grange, a subordinate grange of the Deep South, offered a ray of hope for the impoverished. (Robert Partin, "Black's Bend Grange, 1873-1877: A Case Study of a Subordinate Grange of the Deep South," Agricultural History 31:49-59. July 1957.)

1873. Silver was demonetized in what came to be known among western farmers as "the Crime of '73." Free silver became a prominent rural issue. (Paul Barnett, "The Crime of 1873 Re-examined," Agricultural History 38:178-181. July 1964.)

1873. Grasshoppers became a serious pest in the West. (John T. Schlebecker, "Grasshoppers in American Agricultural History," Agricultural History 27:85-93. July 1953.)

1873. The "Washington" navel orange was introduced into Riverside, California, by Mrs. Eliza Tibbets with trees secured from Bahia, Brazil by the U.S. Department of Agriculture. (L. D. Batchelor and H. J. Webber, eds. The Citrus Industry. Vol. 1. Berkeley, Calif.: University of California Press, 1943. 1028 pp., index.)

1873. Aberdeen-Angus bulls were imported from Scotland by George Grant of Victoria, Kansas. (H. M. Briggs. Modern Breeds of Livestock. 3d ed. New York: Macmillan Co., 1969. 714 pp., illus., index.)

1873. Settlement of the Great Plains was accelerated by the cattle boom and the panic of 1873. (O. V. Wells, "The Depression of 1873-79," Agricultural History 11:237-249. July 1937.)

1873. Hard money, high freight rates, and monopoly were the most prominent agricultural issues of the day. They reflected the shift in power from the agrarian to the financial and industrial interests that were a result of the Civil War. (Albert V. House, Jr. "Proposals of Government Aid to Agricultural Settlement During the Depression of 1873-1879," Agricultural History 12:46-66. Jan. 1938.)

1873. The depression following the panic proved one of the worst in American history. (Irwin Unger. The Greenback Era: A Social and Political History of American Finance, 1865-1879. Princeton, N.J.: Princeton University Press, 1964. 467 pp., index.)
- 1873, March 3. The Timber Culture Act allowed papers to be taken out on 160 acres of treeless land. The homesteaders agreed to plant a quarter of their land with trees over a 10-year period. (David M. Emmons, "American Myth: Desert of Eden; Theories of Increased Rainfall and the Timber Culture Act of 1873," Forest History 15:6-14. Oct. 1971.)
1874. The first Chautauqua was formed. The Chautauqua movement started as a device for training Sunday school teachers and developed into an adult education program for rural areas. (Theodore Morrison. Chautauqua: A Center for Education, Religion, and Arts in America. Chicago, Ill.: University of Chicago Press, 1974. 351 pp., maps, illus., index.)
1874. The pressure cooker was invented. Patents were first granted in 1902, although pressure cookers were not in general use until 1935. (G. E. Hilbert, "Better Ways of Handling Food," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 128-132.)
1874. Durra sorghum, known as Egyptian corn, was introduced into California from Egypt. (Carleton R. Ball, "The Grain Sorghums: Immigrant Crops That Have Made Good," Yearbook of Agriculture, U.S. Dept. Agr., 1913, pp. 221-238.)
1874. A general crop failure in Kansas demonstrated conflicts between the towns and farm areas. (Robert R. Dykstra, "Town-Country Conflict: A Hidden Dimension of American Social History," Agricultural History 38:195-204. Oct. 1964.)
1874. German Mennonites from Russia immigrated to Kansas, a State which had exempted conscientious objectors from military service. The Sante Fe Railroad sold the Mennonites 60,000 acres of land for \$250,000 in gold. (Everett N. Dick. The Sod House Frontier, 1854-1893. New York: D. Appleton-Century Co., 1937. 574 pp. biblio., index.)
1874. The first important introductions of Turkey wheat by Mennonites into Marion and Harvey counties, Kansas, were made. (K. S. Quisenberry and L. P. Reitz, "Turkey Wheat: The Cornerstone of an Empire," Agricultural History 48:98-110. Jan. 1974.)
1874. Manufacture of oleomargarine began in the United States. (Earl W. Hayter. The Troubled Farmer, 1850-1900. DeKalb, Ill.: Northern Illinois University Press, 1968. 349 pp., illus., notes, index.)
1874. The Farmers' Alliance movement began during the middle seventies in response to farmers' economic distress. The original purposes of the Alliance, unlike those of the Grange, were wholly economic and political. (Edward Wiest. Agricultural Organization in the United States. Lexington, Ky.: University of Kentucky, 1923. 618 pp., index.)
1874. The New York Produce Exchange agreed to establish a uniform system of grain inspection and grading. (Harry Fornari. Bread Upon the Waters. Nashville, Tenn.: Aurora Publishers, 1973. 174 pp., illus., notes, biblio., index.)
1874. The Grange was at its height during the middle seventies. It had started out as a fraternal order, but the economic circumstances in which farmers found themselves in that period forced the Grange to take a stand on such economic issues as railroad regulation and hard money.

1874, November. The Glidden barbed-wire patent was granted. Barbed wire contributed greatly to the agricultural settlement of the Great Plains. (Ray Allen Billington. Westward Expansion. New York: Macmillan Co., 1949. 873 pp., maps, biblio., index.)

1875. The U.S. Government appropriated \$150,000 for settlers made destitute by the grasshopper plagues. (Harold E. Briggs, "Grasshopper Plagues and Early Dakota Agriculture, 1864-1876," Agricultural History 8:51-63. Apr. 1934.)

1875. The first State agricultural experiment station in the United States was established in Middletown, Connecticut, through the efforts of Samuel W. Johnson. In the same year, the California Agricultural Experiment Station was founded at the University of California by Eugene W. Hilgard. (Paul E. Waggoner and Paul Gough, "The First Two Stations--Connecticut, California," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 2-8.)

1875. The first widely publicized silos in the United States were built in Maryland and Michigan. (Norman C. Teter and Henry Giese, "New Barns for Old," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 218-230.)

1875. Bonanza wheat farming with machines began in the Red River Valley. (Hiram M. Drache. The Day of the Bonanza: A History of Bonanza Farming in the Red River Valley of the North. Fargo, N.Dak.: North Dakota Institute for Regional Studies, 1964. 239 pp., index.)

1875. Timothy C. Eastman of New York began making the first continuous shipments of American beef to England. (Rudolf A. Clemen. The American Livestock and Meat Industry. New York: Ronald Press Co., 1923. 872 pp., illus., index.)

1875, September 10. The American Forestry Association was organized for public promotion of forestry and timber culture. (Herbert A. Smith, "The Early Forestry Movement in the United States," Agricultural History 12:326-346. Oct. 1938.)

1876, March 7. Alexander Graham Bell patented the telephone. (Roger Burlingame. Out of Silence into Sound. New York: Macmillan Co., 1964. 146 pp., biblio., index.)

1877. North Carolina State Experiment Station was established primarily to test commercial fertilizers. (Tom Byrd, "State Experiment Station," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 50-55.)

1877. Ukrainian farmers began to migrate to America in considerable numbers. (Wasył Halich, "Ukrainian Farmers in the United States," Agricultural History 10:25-39. Jan. 1936.)

1877, March 1. The Supreme Court declared that a State legislature had the power to regulate warehouse and intrastate railroad rates in Munn v. Illinois, an important Granger case. (Richard N. Current & others. American History: A Survey. 4th ed. New York: Alfred A. Knopf, 1975. 956 pp., apps., index.)

1877, March 3. The U.S. Entomological Commission was established to investigate the grasshopper problem. (L. O. Howard, "The Rise of Applied Entomology in the United States," Agricultural History 3:131-139. July 1929.)

1877, March 3. The Desert Land Act, to encourage development of irrigation in arid lands, offered land at 25 cents an acre if irrigated and cultivated for 3 years.

(John T. Ganoë, "The Desert Land Act Since 1891," Agricultural History 11:266-277. Oct. 1937.)

1877, July 1. William G. Le Duc (Mar. 29, 1823-Oct. 30, 1917) of Minnesota served as Commissioner of Agriculture from July 1, 1877 to June 30, 1881. (William G. Le Duc. Recollections of a Civil War Quartermaster: The Autobiography of Wm. G. Le Duc. St. Paul, Minn.: The North Central Publishing Co., 1963. 167 pp.)

1878. Sugar beets were cultivated successfully in Maine under a system of vertical integration. (Wayne D. Rasmussen. Readings in the History of American Agriculture. Urbana, Ill.: University of Illinois Press, 1960. 340 pp., index.)

1878, June 3. The Timber and Stone Act sold, for \$2.50 an acre, lands that were valuable for timber and stone only. (Joe R. Motheral, "Land and Our Economic Development," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 28-41.)

1878, September 17. A twine-knotter for use in binding grain was patented by John F. Appleby. (Vivian D. Wiser, "Men and Milestones." In: Farm Index, U.S. Dept. of Agr., Washington, D. C.: Mar. 1976, p. 20.)

1879. First successful beet sugar factory in the United States was built at Alvarado, California. (Leonard J. Arrington. Beet Sugar in the West. Seattle, Wash.: University of Washington Press, 1966. 234 pp., illus., notes, biblio., index.)

1880-83. Following the resumption of specie payments in 1879, which put an end to the greenback days of the Civil War, there was a brief period of prosperity.

1880-1890. This was the period of the greatest railroad construction with 71,000 miles of new track built. (John F. Stover. American Railroads. Chicago, Ill.: University of Chicago Press, 1961. 302 pp., illus., index.)

1880. One farmer out of every four was a tenant farmer in spite of the Homestead Acts. By 1935, two out of every five were tenants. (John F. Timmons, "Farm Ownership in the United States: An Appraisal of the Present Situation and Emerging Problems," Journal of Farm Economics 30:78-100. Feb. 1948.)

1880. Evaporated milk was developed by John B. Meyenberg. (C. H. Eckles and others. Milk and Milk Products. 2d ed. New York: McGraw Hill Book Co., Inc., 1936. 386 pp., illus., diagrams, index.)

1880. Between 1870 and 1880, the number of farms in the 13 former slave States increased by 65 percent. (Theodore Saloutos, "Southern Agriculture and the Problems of Readjustment: 1865-1877," Agricultural History 30:58-76. Apr. 1956.)

1880. Total U.S. population reached 50,155,783; farm population, 22,981,000 (estimated); 49 percent of persons gainfully employed were engaged in agriculture.

1880. Plow agriculture was beginning to extend into the Great Plains. This movement, encouraged by population pressure and facilitated by the development of barbed-wire fencing and the windmill, advanced in spite of the resistance of many cattlemen. (Walter P. Webb. The Great Plains. Boston, Mass.: Ginn & Co., 1931. 345 pp., illus., index.)

1880. The National Farmers' Alliance, or Northern Alliance, was organized by Milton George. (Theodore Saloutos. Farmer Movements in the South, 1865-1933. Berkeley, Calif.: University of California Press, 1960. 354 pp., notes, biblio., index.)

1881. The Treasury Cattle Commission was created by the Congress to study the existence of cattle diseases. (Wm. David Zimmerman, "Live Cattle Export Trade Between United States and Great Britain, 1868-1885," Agricultural History 36:46-52. Jan. 1962.)

1881. The Farmers' Alliance advocated a Federal pure-food law. (R. James Kane, "Populism, Progressivism, and Pure Food," Agricultural History 38:161-166. July 1964.)

1881. Edmund J. Moffat, the first agricultural attache, was sent to London to collect "accurate reports of crop prospects, valuable statistical exchanges, and miscellaneous information...." (Audrey Ames Cook, "Agricultural Intelligence," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 604-607.)

1881. W. J. Beal of Michigan Agricultural College crossed two varieties of corn by detasseling one of them, hybridizing the corn for the sole purpose of utilizing the vigor of the first-generation hybrid to increase production. (M. T. Jenkins, "Corn Improvement," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 464-479.)

1881. Pure-food laws were passed by Illinois, Michigan, New Jersey, and New York. (Gustavus A. Weber. The Food, Drug, and Insecticide Administration; Its History, Activities and Organization. Institute for Government Research, Service Monographs of the U.S. Government, No. 50. Baltimore, Md.: Johns Hopkins University Press, 1928. 134 pp., index.)

1881, July 1. George B. Loring (November 3, 1817-September 14, 1891) of Massachusetts served as Commissioner of Agriculture from July 1, 1881 to April 3, 1885.

1882. A modern cream separator, invented in Sweden by Carl DeLaval, was brought to the United States. (Everett E. Edwards, "Europe's Contribution to the American Dairy Industry," Journal of Economic History, Supplement 9:72-84. 1949.)

1882. The New York State Agricultural Experiment Station at Geneva, New York, was established under the direction of Cornell University. (Gould P. Colman, "Pioneering in Agricultural Education: Cornell University, 1867-1890," Agricultural History 36: 200-206. Oct. 1962.)

1882. The German bacteriologist, Robert Koch, isolated the tubercle bacillus, thereby taking the first step in the direction of control of tuberculosis in dairy herds. (M. Dorset, "Tuberculin of Greater Purity and Efficiency Developed by Department," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 319-321.)

1882. The first central electric generating station went into service. (R. W. Lynn and J. E. O'Brien, "Electric and Telephone Systems," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 455-462.)

1882, January 31. The first lecture course for farmers was opened at the University of Minnesota. The lectures were to be practical and to treat a variety of farm topics. (Roy V. Scott, "Early Agricultural Education in Minnesota: The Institute Phase," Agricultural History 37:21-34. Jan. 1963.)

1882, February 15. The Agricultural Wheel, a farmers' organization opposed to monopoly and oppression, was organized in Arkansas. It was later absorbed by the Farmers' Alliance. (Theodore Saloutos, "The Agricultural Wheel in Arkansas," Arkansas Historical Quarterly 2:127-140. June 1943.)

1882, July 21. A land grant by Hawaii to Claus Spreckels helped establish a pattern of large-scale sugar plantations. (Jacob Adler, "The Maui Land Deal: A Chapter in Claus Spreckels' Hawaiian Career," Agricultural History 39:155-163. July 1965.)

1883. The Farmers' Mutual Benefit Association was organized. (Roy Vernon Scott, "The Rise of the Farmers' Mutual Benefit Association in Illinois, 1883-1891," Agricultural History 32:44-55. Jan. 1958.)

1883. Buffalo had been practically exterminated from the Northern Plains by hunters killing the animals for their hides. (Everett Dick. Vanguards of the Frontier. New York: D. Appleton-Century Co., 1941. 574 pp., illus., maps, notes, index.)

1883, October. The Jersey Bulletin began publication in Indianapolis. (John T. Schlebecker and Andrew W. Hopkins. History of Dairy Journalism in the United States, 1810 to 1950. Madison, Wis.: University of Wisconsin Press, 1957. 423 pp., illus., index.)

1884. An epidemic of a contagious bovine pleuropneumonia of foreign origin led to the adoption by the Congress of the first Federal animal quarantine law. (Terrence W. McCabe, "Controls of Imports," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 374-379.)

1884. Smooth broome grass (*Bromus inermis*) was introduced. (Max M. Hoover and others, "The Main Grasses for Farm and Home," Yearbook of Agriculture, U.S. Dept. Agr., 1948, pp. 639-700.)

1884. The New York Dairy Commission was established to regulate and establish standards for dairy products. (Gould P. Colman, "Government and Agriculture in New York State," Agricultural History 39:41-50. Jan. 1965.)

1884. Animal quarantine was transferred to the U.S. Department of Agriculture from the Treasury Department. (Harold A. Waters and L. C. Heemstra, "Inspection and Quarantine," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 325-326.)

1884. Wyoming territory gave control of the stock-raising industry of the territory to the Wyoming Stockgrowers' Association. (Ernest S. Osgood, "The Cattleman in the Agricultural History of the Northwest," Agricultural History 3:117-130. July 1929.)

1884. Economic depression occurred throughout the country.

1884, May 29. The Bureau of Animal Industry was established in accordance with an act of Congress. (Fred W. Powell. The Bureau of Animal Industry; Its History, Activities and Organization. Institute for Government Research. Service Monographs of the U.S. Government, No. 41. Baltimore, Md.: Johns Hopkins Press, 1927. 190 pp., index.)

1884, October 2. Veterinary education, or a formalized study of it, first began in the United States at the University of Pennsylvania. (F. J. Mulhern, "Livestock Health," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 55-60.)

1885. The discovery of Bordeaux mixture, a fungicide, was announced in France. (George F. Johnson, "Early History of Copper Fungicides," Agricultural History 9:67-79. Apr. 1935.)

1885. The driving of Texas cattle to railheads in Kansas came to an end. (Robert R. Dykstra. The Cattle Towns. New York: Alfred A. Knopf, 1968. 386 pp., illus., maps, notes, index.)

1885. The modern rice industry in the United States began. (Edward H. Phillips, "The Gulf Coast Rice Industry," Agricultural History 25:91-96. Apr. 1951.)

1885. Hoard's Dairyman was founded. (John T. Schlebecker, "Dairy Journalism: Studies in Successful Farm Journalism," Agricultural History 31:23-33. Oct. 1957.)

1885. The Bureau of Biological Survey, established July 1, 1905, in the U.S. Department of Agriculture, began as the Division of Economic Ornithology and Mammalogy. (Jenks Cameron. The Bureau of Biological Survey: Its History, Activities and Organization. Institute for Government Research Service Monographs of the U.S. Government, No. 54. Baltimore, Md.: Johns Hopkins Press, 1929. 339 pp., index.)

1885. The Senate Standing Committee on Agriculture became the Committee on Agriculture and Forestry. (U.S. Congress. Senate Committee on Agriculture and Forestry. A Brief History of the Committee on Agriculture and Forestry United States Senate and Landmark Agricultural Legislation 1825-1970. 91st Cong., 2d. sess. Washington, D.C.: GPO, 1970. 52 pp., apps.)

1885. Until this date, nearly all changes made under the Desert Land Act by the Public Land Commissioner and the Secretary of the Interior were directed against cattlemen. (John T. Ganoe, "The Desert Land Act In Operation, 1877-1891," Agricultural History 2:142-157. Apr. 1937.)

1885, April 3. Norman J. Colman (May 16, 1827-Nov. 3, 1911) of Missouri served as Commissioner of Agriculture from April 3, 1885 to February 14, 1889. (George F. Lemmer. Norman J. Colman and Colman's Rural World: A Study in Agricultural Leadership. University of Missouri Studies Vol. 25, No. 3. Columbia, Mo.: The Curators of the University of Missouri, 1953. 168 pp., illus.)

1886-1887. Overgrazing, drought, and blizzard brought disaster to the Great Plains cattle industry. Thereafter the extension of plow agriculture into the semiarid and arid sections of the Great Plains was accelerated. (Robert S. Fletcher, "That Hard Winter in Montana, 1866-1887," Agricultural History 4:123-130. Oct. 1930.)

1886. The Division of Forestry under Dr. Bernard E. Fernow, a Prussian expert on forestry and the first formal chief of the division, was given permanent statutory rank. (Henry E. Clepper, "Chiefs of the Forest Service," Journal of Forestry 59:795-803. Nov. 1961.)

1886, December 29. The Alliance of Colored Farmers of Texas was founded. By 1888, it grew to national status. (Jack Abramowitz, "The Negro in the Agrarian Revolt," Agricultural History 24:89-95. Apr. 1950.)

1887. Granger agitation led to the first positive control over railroad rates in the United States with the passage of the Act to Regulate Commerce. (Ralph L. Dewey and James C. Nelson, "The Transportation Problem of Agriculture," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 720-739.)

1887. The sugar beet seed was successfully produced in the United States. (E. W. Brandes and G. H. Coons, "Sugar-Beet Seed Grown Successfully in America by Overwintering in Field," Yearbook of Agriculture, U.S. Dept. Agr., 1934, pp. 334-337.)

1887. The General Allotment Act provided for the allotment of Indian tribal lands to heads of families and individual Indians. (M. W. Goding, "The Management of Tribal Lands," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 96-102.)

1887, March 2. The Hatch Experiment Station Act was approved, providing Federal grants to States for agricultural experimentation. (A. C. True, "Agricultural Experiment Stations in the United States," Yearbook of Agriculture, U.S. Dept. Agr., 1899, pp. 513-548.)

1887, May 3. The American Cattle Trust, aimed at monopolizing the cattle market, was organized. It was liquidated in 1890. (Gene M. Gressley. Bankers and Cattlemen. New York: Alfred A. Knopf, 1966. 320 pp., illus., notes, biblio., index.)

1887, October. The Association of American Agricultural Colleges and Experiment Stations was organized. (H. C. Knoblauch and others. State Agricultural Experiment Stations: A History of Research Policy and Procedure. U.S. Dept. Agr., Pub. No. 904. Washington, D.C.: GPO, 1962. 262 pp.)

1888. Meat was first shipped in railroad cars cooled by mechanical refrigeration. (Oscar E. Anderson, Jr. Refrigeration in America. Princeton, N.J.: Princeton University Press, 1953. 343 pp., illus., notes, biblio., index.)

1888. The first long haul shipment (consisting of oranges and berries) of a refrigerated freight car was made from California to New York. (Kenneth E. Ogren and Rosaline C. Lifquist, "Getting Farm Products to Consumers," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 478-484.)

1888, October 1. The Office of Experiment Stations was established. On February 23, 1942, it became one of the constituent parts of USDA's Agricultural Research Administration. (Milton Conover. The Office of Experiment Stations, Its History, Activities and Organization. Institute for Government Research, Service Monographs of the U.S. Government, No. 32. Baltimore, Md.: The Johns Hopkins Press, 1924. 178 pp., index.)

1888, November 30. The first shipment of Vedalia beetles arrived from Australia to control fluted scale, which threatened citrus fruit orchards of California. (C. P. Clausen, "Parasites and Predators," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 380-388.)

1889. Reuben F. Kolb was instrumental in getting the State Legislature of Alabama to pass an act authorizing the Commissioner of Agriculture to hold farmers' institutes throughout the State to help educate the farmers. (William Warren Rogers, "Reuben F. Kolb: Agricultural Leader of the New South," Agricultural History 32:109-119. Apr. 1958.)

1889. The Bureau of Animal Industry found that cattle fever was carried by ticks. (C. D. Van Houweling, "Our Battle Against Animal Diseases," Yearbook of Agriculture, U.S. Dept. Agr., 1956, pp. 1-7.)

1889. A series of droughts between 1889-94 forced many frontier farmers in the Great Plains to leave their homes. (Gilbert C. Fite, "Daydreams and Nightmares: The Late Nineteenth-Century Agricultural Frontiers," Agricultural History 40:285-293. Oct. 1966.)

1889. The Farmers' Alliance evolved the subtreasury plan, whereby the Government was to grade and store farm products in Government warehouses. The farmers were to receive a year's loan for produce so deposited and were to be able to redeem it for sale in the open market when it seemed advantageous to do so. (James C. Malin, "The Farmers' Alliance Subtreasury Plan and European Precedents," Mississippi Valley Historical Review 31:255-260. Sept. 1944.)

1889. Secretary of Agriculture Jeremiah M. Rusk set up a Division of Records and Editing as one of 10 divisions in the Department. (L. E. Childers, "The Role of a Free Press," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 95-97.)

1889, February 9. The U.S. Department of Agriculture was raised to cabinet status. (Dale E. Hathaway. Government and Agriculture; Public Policy in a Democratic Society. New York: Macmillan & Co., 1963. 412 pp., index.)

1889, February 15. Norman J. Colman (May 16, 1827-November 3, 1911) of Missouri served as Secretary of Agriculture from February 13, 1889 to March 6, 1889. (George F. Lemmer, Norman J. Colman and Colman's Rural World: A Study in Agricultural Leadership. University of Missouri Studies Vol. 25, No. 3. Columbia, Mo.: The Curators of the University of Missouri, 1953. 168 pp., illus.)

1889, March 7. Jeremiah McLain Rusk (June 17, 1830-November 21, 1893) of Wisconsin served as Secretary of Agriculture from March 6, 1889 to March 6, 1893. (Leonard D. White, The Republican Era: 1869-1901. New York: Macmillan & Co., 1958. 406 pp., index.)

1890. The McKinley Tariff Act was passed with a tariff on some agricultural products. (Paul W. Glad, McKinley, Bryan and the People. New York: Lippincott & Co., 1964. 222 pp., index.)

1890. The Sherman Antitrust Act was passed in an effort to stem the growing tide of monopolistic control in industry which worked to the disadvantage of the consumer. (R. W. Hoecker, "Supermarkets Around the World," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 279-291.)

1890. This date marked the end of the historic era of cheap and free lands open to agricultural settlement. In 1893, Frederick Jackson Turner used this fact as the basis for his frontier theory. (Frederick Jackson Turner, The Frontier in American History. New York: Henry Holt & Co., 1921. 375 pp., index.)

1890. Stephen M. Babcock perfected a test for measuring butterfat content of milk. (Eric E. Lampard, The Rise of the Dairy Industry in Wisconsin. Madison, Wis.: State Historical Society of Wisconsin, 1963. 466 pp., index.)

1890. To produce 1 acre (20 bushels) of wheat with a gang plow, a seeder, a harrow, a binder, a thresher, wagons, and horses 8 to 10 man-hours of labor were required.

1890. Total U.S. population reached 62,947,714; farm population, 26,379,000 (estimated); 43 percent of persons gainfully employed were engaged in agriculture.

1890, August 30. The Meat Inspection Act was approved, authorizing the inspection of salted pork, bacon, and live animals intended for exportation, and the quarantine of imported animals. (John L. Gignilliant, "Pigs, Politics, and Protection: The European Boycott of American Pork, 1879-1891," Agricultural History 35:3-12. Jan. 1961.)

1890, August 30. The second Morrill Land-Grant College Act authorized separate land-grant colleges for Negroes; 17 were established. (William Payne, "The Negro Land-Grant College," Civil Rights Digest 3:12-17. Spring 1970.)

1890, September 9. J. F. Hurd of Minnesota patented a combination corn-shucking and fodder-shredding machine.

1890, October 1. The Weather Bureau was transferred from the War Department to the Department of Agriculture by an act of Congress. (Donald R. Whitnah, A History of the Weather Bureau. Urbana, Ill.: University of Illinois Press, 1961. 367 pp., index.)

1891. The first International Irrigation Convention was held at Salt Lake City. Delegates from Mexico and Canada were present at the Denver meeting in 1894. (Lawrence B. Lee, "The Canadian-American Irrigation Frontier, 1884-1914," Agricultural History 40:271-283. Oct. 1966.)

1891, March 3. An act of Congress authorized the President to establish forest reserves from the public domain. (John B. Bennett and others, "The Heritage of Our Public Lands," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 42-52.)

1891, March 30. President Harrison created the first reserve--the Yellowstone Timberland Reserve, an area of 1,239,040 acres in Wyoming. These reserved lands are now in the Shoshone and Teton National Forests, (Edward P. Cliff, "The Care and Use of National Forests," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 392-401.)

1891, May 19. The People's, or Populist, party was launched as a national organization. (John D. Hicks. The Populist Revolt. Minneapolis, Minn.: University of Minnesota Press, 1931. 473 pp., index.)

1891, October 16. President Harrison signed a proclamation withdrawing 1,198,080 acres in Colorado, known as the White River Plateau Timberland Reserve, now the White River National Forest. Before his term had expired, President Harrison set aside forest reservations totaling 13 million acres. No plan of operation was passed by the Congress and the reserves were simply closed areas. (John Ise. The United States Forest Policy. New Haven, Conn.: Yale University Press, 1920. 395 pp., map, tables, biblio., index.)

1892. The first successful gasoline tractor was built by John Froehlich. (Roy B. Gray. Development of the Agricultural Tractor in the United States. 2 vols. Washington, D.C.: U.S. Department of Agriculture, 1954.)

1892. The cotton boll weevil was found near Brownville, Texas, and began to spread north and east. (C. F. Rainwater, "The Battle With Cotton Insects," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 337-339.)

1892. It was reported that the last case of pleuropneumonia in cattle had been disposed of. (F. J. Mulhern and others, "Eradication of Animal Diseases," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 313-320.)

1892. The first fruit-growers union in the Pacific Northwest was organized. (Joseph Waldo Ellison, "The Cooperative Movement in the Oregon Apple Industry, 1910-1929," Agricultural History 13:77-96. Apr. 1939.)

1892, October 8. Elam Bartholomew was appointed special agent for the U.S. Department of Agriculture to learn how rust could be prevented in wheat. (Leonard E. Muir, "Elam Bartholomew, Farmer Extraordinary," Agricultural History 34:189-193. Oct. 1960.)

1893. The Congress appropriated \$10,000 for a study of improved techniques of road building to be conducted by the U.S. Department of Agriculture. (John B. Rae, "The Internal-Combustion Engine on Wheels," In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. 1. New York: Oxford University Press, 1967. pp. 119-137.)

1893. Panic developed as result of financial problems in England, decrease in U.S. revenues, and decline of gold reserve.

1893, March 7. J. Sterling Morton (April 22, 1832-April 27, 1902) of Nebraska served as Secretary of Agriculture from March 7, 1893 to March 5, 1897. (James C. Olson. J. Sterling Morton. Lincoln, Nebr.: University of Nebraska Press, 1942. 451 pp., illus.)

1894. The Carey Land Act, granting land to the Western States after the States had provided for its irrigation, was approved. (Lesley M. Heathcote, "The Montana Arid Land Grant Commission 1895-1903," Agricultural History 38:108-117. Apr. 1964.)

1895. A patent was granted on a spindle-type cottonpicker to August Campbell. The principle on which it worked was developed by the International Harvester Company in the 1920's and introduced in the early 1940's. (Vernon P. Moore and Rex F. Colwick, "Ginning Today's Cotton," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 427-432.)

1895, October 21. Sunkist Growers, Inc., for many years called the California Fruit Growers Exchange, was incorporated as the Southern California Fruit Exchange. (H. E. Erdman, "The Development and Significance of California Cooperatives, 1900-1915," Agricultural History 32:179-184. July 1958.)

1896. W. O. Atwater published Bulletin 28 of the U.S. Department of Agriculture, the first extensive table of food values. (Ernest G. Moore, "Men Who Went Before," Yearbook of Agriculture, U.S. Dept. Agr., 1943-47, pp. 1-16.)

1896. George Washington Carver was chosen to run the newly created agricultural department at the Tuskegee Institute in Alabama. He spent the next 40 years of his life conducting research to determine the nutritive value of foods, battling the boll weevil, and aiding cotton farmers in finding new crops. (Rackham Holt. George Washington Carver: An American Biography. Garden City, N.Y.: Doubleday, Doran & Co., 1943. 342 pp., illus.)

1896, October 1. A rural free delivery system for handling mail was started. (Wayne E. Fuller. RFD: The Changing Face of Rural America. Bloomington, Ind.: Indiana University Press, 1964. 316 pp., notes, index.)

1897. The Tea Importation Act, the first U.S. law regulating food products, was passed. (George R. Grange, "Grading--Assurance of Quality," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 297-305.)

1897. The brown-tail moth, devastating to many trees, was found in Somerville, Massachusetts. (C. W. Collins and T. H. Jones, "Gipsy and Brown-Tail Moth Infestations are Checked by Imported Parasites," Yearbook of Agriculture, U.S. Dept. Agr., 1932, pp. 236-239.)

1897. President Grover Cleveland, following the recommendations of the Forest Commission, set aside 22 million acres of land as new forest reserves. (Gifford Pinchot, "How Conservation Began in the United States," Agricultural History 2:255-265. Oct. 1937).

1897, March 6. James Wilson of Iowa (August 16, 1835-August 26, 1920) served as Secretary of Agriculture from March 6, 1897 to March 5, 1913. (Earley V. Wilcox. Tama Jim. Boston, Mass.: Stratford Co., 1930. 196 pp., index.)

1898. The U.S. Department of Agriculture started to introduce large numbers of soybean varieties. (Edwin G. Strand. Soybean Production in War and Peace. Washington, D.C.: U.S. Department of Agriculture, Bureau of Agricultural Economics, Sept. 1945. 41 pp.)

1898. Commercial production of durum wheat began, although it had been introduced as early as 1864 by Russian immigrants. New varieties were introduced by Mark Carleton of the U.S. Department of Agriculture in 1900. (J. Allen Clark, "Improvement in Wheat," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 207-302.)

1898. William A. Henry of the Wisconsin Experiment Station began publication of Feeds and Feeding. (W. H. Glover. Farm and College: The College of Agriculture of the University of Wisconsin. Madison, Wis.: University of Wisconsin Press, 1952. 462 pp.)

1898. Kubanka durum wheat was introduced into North Dakota from Russia. (Mark Alfred Carleton, "Hard Wheats Winning Their Way," Yearbook of Agriculture, U.S. Dept. Agr., 1914, pp. 391-420.)

1898. Gifford Pinchot was named head of the Forestry Division in the U.S. Department of Agriculture. At the time, the division employed 12 persons. (Gifford Pinchot. Breaking New Ground. New York: Harcourt, Brace & Co., 1947. 522 pp., index.)

1898. The National Livestock Association, which became the American National Live Stock Association in 1906 and the American National Cattlemen's Association in 1952, was organized. (Charles A. Burmeister, "Six Decades of Rugged Individualism: The American National Cattlemen's Association, 1898-1955," Agricultural History 30:143-150. Oct. 1956.)

1898, February 8. The Chicago Butter and Egg Board was organized with the grading of butter and eggs as one of its major functions. (H. S. Irwin, "Some Early Chicago Butter Marketing Practices," Agricultural History 35:82-84. Apr. 1961.)

1899. An improved method of anthrax inoculation was devised, but anthrax outbreaks occurred from time to time. (C. D. Stein and G. B. VanNess "Anthrax," Yearbook of Agriculture, U.S. Dept. Agr., 1956, pp. 229-234.)

1899. The Soil Survey was organized and worked cooperatively with the U.S. Department of Agriculture and the State Agricultural Experiment Stations gathering data and learning about soils. (Charles E. Kellogg, "We Seek; We Learn," Yearbook of Agriculture, U.S. Dept. Agr., 1957, pp. 1-11.)

1899. Research by the Florida Agricultural Experiment Station on "salt-sick" disease of beef cattle resulted in a cure. (Samuel Proctor, "The Early Years of the Florida Experiment Station, 1888-1906," Agricultural History 36:213-221. Oct. 1962.)

1900. The Society of American Foresters was founded. (Ralph S. Hosmer, "The Society of American Foresters: An Historical Summary," Journal of American Forestry 38:837-854. Nov. 1940.)

1900. Special work projects for farm youth were organized in Macoupin County, Illinois, and in other areas shortly thereafter; the name "4-H" was adopted in 1913. (Franklin M. Reck. The 4-H Story: A History of 4-H Club Work. Ames, Ia.: Iowa State College Press, 1951. 308 pp., index.)

1900. Gregor Mendel's work on heredity was rediscovered. (Wayne D. Rasmussen, "Scientific Agriculture." In: Melvin Kranzberg and Carroll W. Pursell, Jr., eds. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967, pp. 337-353.)

1900. Kharkof wheat, a bearded hard red winter variety, was introduced from Russia. (B. T. Galloway, "Immigrant Plants Hold Large Place Among U. S. Crops," Yearbook of Agriculture, U.S. Dept. Agr., 1928, pp. 379-381.)

1900. Research and experiments by USDA scientist W. A. Orton and South Carolina farmer E. L. Rivers led to the development of cotton plants resistant to wilt disease, and encouraged research in developing other disease-resistant plants. (J. O. Ware, "Plant Breeding and the Cotton Industry," Yearbook of Agriculture, U.S. Dept. Agr., 1936, pp. 659-744.)

1900. Yearly exhibitions were begun by the International Livestock Exposition. (Charles Wayland Torone and Edward Norris Wentworth. Cattle & Men. Norman, Okla.: University of Oklahoma Press, 1955. 384 pp.)

1900. Total U.S. population reached 75,994,575; farm population, 29,414,000 (estimated); 38 percent of persons gainfully employed were engaged in agriculture.

1901. The Bureau of Plant Industry (which included Forestry, Chemistry, and Soils) was established under the authority of the appropriation act of March 1901, but not confirmed by an act of Congress until June 3, 1902. (Fred W. Powell. The Bureau of Plant Industry: Its History, Activities, and Organization. Institute for Government Research. Service Monographs of the U.S. Government, No. 41. Baltimore, Md.: Johns Hopkins Press, 1927. 121 pp.)

1901, July 1. The Division of Chemistry, established in 1862, became the Bureau of Chemistry (31 Stat. 930.)

1902. The American Society of Equity, a farmers' organization devoted largely to improving marketing practices, was formed. (Theodore Saloutos, "The Decline of the Wisconsin Society of Equity," Agricultural History 15:137-150. July 1941.)

1902. Hugo DeVries, A Dutch botanist, announced his theory of mutation. (Botanical Society of America. Fifty Years of Botany. Golden Jubilee Volume. New York: McGraw-Hill, 1958. 638 pp., index.)

1902, June 17. The Reclamation Act, sometimes called the Newlands Act, was passed. (William E. Warne. The Bureau of Reclamation. New York: Praeger Publishers, 1973. 270 pp., index.)

1902, August 28. The Farmers' Union, also known as the Farmers' Educational and Cooperative Union of America, was organized. (William P. Tucker, "Populism Up-To-Date: The Story of the Farmers' Union," Agricultural History 21:198-208. Oct. 1947.)

1903. Seaman A. Knapp directed a privately financed demonstration in improved cotton production methods in Terrell, Texas. (Joseph C. Bailey. Seaman A. Knapp, Schoolmaster of American Agriculture. Columbia University Studies in the History of American Agriculture No. 10. New York: Columbia University Press, 1945. 307 pp., illus.)

1903. The Alaskan Homestead Act of 1898 was amended to permit entry on 320 acres of surveyed or unsurveyed land. A number of settlers established farms under this act, which was modified in 1916 to limit homesteads to 160 acres. (H. A. Johnson, "Seward's Folly Can Be A Great Land," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 424-439.)

1903. H. L. Russell discovered galactase (milk enzyme).

1903, February. The outbreak of a "range war" in Wyoming lasted 6 years. (Harold E. Briggs, "The Early Development of Sheep Ranching in the Northwest," Agricultural History 11:161-180. July 1937.)

1904. The Holt Company fitted a steam tractor with "caterpillar" tracks and, in 1906, produced the first caterpillar tractor powered by a gasoline engine. (James F. Shepherd, "The Development of Wheat Production in the Pacific Northwest," Agricultural History 49:258-271. Jan. 1975.)

1904. The Burlington Railroad began running special trains through the Midwest, carrying agricultural experts and equipment to demonstrate better farming methods to local farmers. (C. Clyde Jones, "The Burlington Railroad and Agricultural Policy in the 1920's," Agricultural History 31:67-74. Oct. 1957.)

1905. Forest Service fire fighters were organized. (William C. Wood, "That Forests May Live--The Smokejumpers," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 193-197.)

1905. The Office of Dry Land Agriculture of the Bureau of Plant Industry was established. It concentrated on tree planting programs in the more arid sections of the Great Plains. (W. H. Droze, "Changing the Plains Environment: The Afforestation of the Trans-Mississippi West, Agricultural History 51:6-22. Jan. 1977.)

1905. The International Institute of Agriculture was established. (Henry C. Taylor, "A Century of Agricultural Statistics," Journal of Farm Economics 21:697-706. November 1939.)

1905. C. W. Hart and C. H. Parr established the first business in the United States devoted exclusively to making tractors. (E. M. Dieffenbach and R. B. Gray, "The Development of the Tractor," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 25-45.)

1905, February 1. The Congress provided for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture. (33 Stat. 626). (Samuel T. Dane. Forest and Range Policy: Its Development in the United States. New York: McGraw-Hill Book Co., Inc., 1956. 455 pp., diagrams, biblio., index.)

1905, March 3. The Livestock Quarantine Act was approved. (Fred W. Powell. The Bureau of Animal Industry: Its History, Activities and Organization. Institute for Government Research Service Monographs of the U.S. Government, No. 41. Baltimore, Md.: Johns Hopkins Press, 1927. 190 pp., index.)

1905, July 1. The Agricultural Appropriation Act (March 3, 1905, 33 Stat. 872), designated the old Bureau of Forestry (established 1901) as the Forest Service. When the Forest Service took charge of the forest reserves they numbered 60, with a net acreage of 56 million acres of land actually owned by the Government. Gifford Pinchott was named chief forester. (Michael Frome. The Forest Service. New York: Praeger Publishers, 1971. 241 pp., illus., tables, diagrams, maps, index.)

1905, September 26. The first dairy cow testing association was organized in Mewaygo County, Michigan, and was followed by the appointment of Helmer Rabild on May 1, 1908, to carry on cooperative cow testing association work in the Bureau of Animal Industry of the U.S. Department of Agriculture. (U. G. Houck. The Bureau of Animal Industry. Washington, D.C.: The Author, 1924. 390 pp., illus.)

1906. The Hepburn Act was passed. It was designed to eliminate flagrant and long-standing abuses in transportation and storage. (Harry A. Haring. Warehousing: Trade, Customs and Practices, Financial and Legal Aspects. New York: The Ronald Press Co., 1925. 787 pp., diagrams, index.)

1906. An agricultural wagon, or movable farmers' school, was started by Booker T. Washington of Tuskegee Institute to teach Negro farmers better methods of farming. Thomas M. Campbell and J. B. Pierce were appointed as the first Negro demonstration agents. (Felix James, "The Tuskegee Institute Movable School, 1906-1923," Agricultural History 45:201-209. July 1971.)

1906. The Brahman cattle industry was established in the United States by importations from India. (W. H. Black, "Beef Cattle Especially Adopted to Gulf Coast Area Being Developed," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 133-136.)

1906. The first-known rural electric line was constructed at Hood River, Oregon. (William L. Cavert, "The Technological Revolution in Agriculture, 1910-1955," Agricultural History 30:18-27. Jan. 1956.)

1906, March 16. The Adams Act increased appropriations for agricultural experiment stations. (Charles E. Rosenberg, "The Adams Act: Politics and the Cause of Scientific Research," Agricultural History 38:3-12. Jan. 1964.)

1906, June 11. The Forest Homestead Act (34 Stat. 233) provided that valuable agricultural lands within forest reserves be listed for homestead and entry purposes. (Harold K. Steen. The U.S. Forest Service: A History. Seattle, Wash.: University of Washington, 1976. 356 pp., index.)

1906, June 29. The Congress approved the 28-Hour Law which required humane care of livestock in interstate shipment. (Arthur D. Herrick. Food Regulation and Compliance. Vol. I. New York: Revere Publishing Co., 1944. 646 pp., index.)

1906, June 30. The Pure Food and Drug Act was approved. (Oscar E. Anderson. The Health of A Nation: Harvey W. Wiley and the Fight for Pure Food. Chicago, Ill.: University of Chicago Press, 1958. 333 pp., illus., index.)

1906, June 30. The Meat Inspection Act was approved. (C. H. Pals and K. F. Johnson, "Clean, Wholesome Meat," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 321-324.)

1906, November 12. W. C. Stallings of Smith County, Texas, was appointed the first county agent. J. B. Pierce and Thomas M. Campbell were appointed the first Negro field agents. They worked directly with farmers in applying improved farming methods. (J. A. Evans. Recollections of Extension History. North Carolina Extension Circular No. 224. Raleigh, N.C.: North Carolina State College, 1938. 52 pp.).

1907. Mission agricultural colleges were first established. (Dana G. Dalrymple, "New Technology: Rose and Thorn," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 298-307.)

1907. The U.S. Bureau of Animal Industry at Ames, Iowa, demonstrated a successful hog cholera serum. (C. N. McBryde, "Hog Cholera," Yearbook of Agriculture, U.S. Dept. Agr., 1942, pp. 673-683.)

1907. The American Society of Agricultural Engineers was founded. (Howard F. McColley and J. W. Martin. Introduction to Agricultural Engineering. New York: McGraw Hill, 1955. 553 pp., illus., index.)

1907, January. The Dry Farming Congress was launched at Denver, Colorado, and included representatives of agricultural research institutions as well as those of business concerns engaged in dry farming. (Mary W. M. Hargreaves, "Hardy Webster Campbell (1850-1937)," Agricultural History 32:62-65. Jan. 1958.)

1908. Virginia was the first of 11 States to make a specific appropriation for the teaching of agriculture in public high schools. (Dick J. Crosby, "Agriculture in Public High Schools," Yearbook of Agriculture, U.S. Dept. Agr., 1912, pp. 471-482.)

1908. The first cooperative bull association was organized by Michigan Agricultural College. (Joel G. Winkjer, "Cooperative Bull Associations," Yearbook of Agriculture, U.S. Dept. Agr., 1916, pp. 311-319.)

1908. "Sunkist" was adopted as a trademark for a brand of oranges. (Kelsey B. Gardner and Neil H. Borden, "Advertising: Another Viewpoint," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 183-187.)

1908. The first practical motor-driven washer was introduced, although a motor made specifically for washing machines was not put into production until 1913. (Earl C. McCracken and others, "Technology in Homes," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 403-415.)
1908. One of the first reports appeared on crop injury believed to have been caused by insecticide accumulation in the soil. (Victor R. Boswell, "Residues, Soils, and Plants," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 284-297.)
1908. Arsenate of lead was used in dust form for insect control. (C. F. Rainwater, "Progress in Research on Cotton Insects," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 497-500.)
1908. The Wright Brothers demonstrated the first airplane. The airplane was subsequently used by farmers in crop dusting. (Fred C. Kelley. Wright Brothers, A Biography Authorized by Orville Wright. New York: Harcourt Brace, Inc., 1943. 340 pp., index.)
- 1908, May 13-15. White House Conference on Conservation was held. (J. L. Penick, Jr., "The Resource Revolution." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology of Western Civilization. Vol. II. New York: Oxford University Press, 1967. Pp. 431-448.)
- 1908, August 10. President Theodore Roosevelt organized the Country Life Commission which made its first report to him on January 23, 1909. (Clayton S. Ellsworth, "Theodore Roosevelt's Country Life Commission," Agricultural History 34:155-172. Oct. 1960.)
1909. Karakul sheep, whose skins are used in the production of Persian lamb fur, were brought to the United States. (F. R. Marshall and others, "Karakul Sheep," Yearbook of Agriculture, U.S. Dept. Agr., 1915, pp. 249-262.)
1910. The first boys' pig club was organized in Caddo Parish, Louisiana, to interest boys in swine production. (W. F. Ward, "The Boys' Pig Club Work," Yearbook of Agriculture, U.S. Dept. Agr., 1915, pp. 173-188.)
1910. Frederick V. Coville of the U.S. Department of Agriculture domesticated the wild blueberry. (Frederick V. Coville, "Improving the Wild Blueberry," Yearbook of Agriculture, U.S. Dept. Agr., 1937, pp. 559-574.)
1910. The Forest Products Laboratory was founded to investigate problems in wood utilization. (Edward G. Locke, "Research and Wood," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 210-215.)
1910. The market for onfarm electric power was discussed at the annual convention of the National Electric Light Association. (Harvey Schermerhorn. The Dairyland Power Story. LaCross, Wis.: Dairyland Power Cooperative, 1973. 412 pp., illus., index.)
1910. Potato breeding was actively undertaken by the U.S. Department of Agriculture. (F. J. Stevenson and Robert V. Akeley, "Breeding Healthy Potatoes," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 327-332.)
1910. Thomas Hunt Morgan announced his theory of genes. (Leslie C. Dunn. A Short History of Genetics: The Development of Some of the Main Lines of Thought, 1864-1939. Johns Hopkins Univ. Inst. of Hist. of Medicine. Publication, 3d Ser.: The Hidevo Noguchi Lectures. New York: McGraw Hill, 1965. 261 pp.)
1910. The U.S. population reached 91,972,266; farm population, 32,077,000 (estimated); 31 percent of persons gainfully employed were engaged in agriculture.

1910, April 26. The Federal Insecticide Act became law. (Allen B. Lemmon, "State Pesticide Laws," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 302-310.)

1910, June. The Forest Products Laboratory, the first of its kind, was established by the Forest Service in cooperation with the University of Wisconsin at Madison, Wisconsin. (Charles A. Nelson. History of the U.S. Forest Products Laboratory 1910-1963. Madison, Wis.: U.S. Forest Products Laboratory, 1971. 177 pp., illus., tables, index.)

1910, July. Girls' canning and garden clubs originated in Aiken County, South Carolina. (Franklin M. Reck. The 4-H Story: A History of 4-H Club Work. Ames, Ia.: The Iowa State College Press, 1951. 308 pp., biblio., index.)

1911. The domestication of the blueberry and its development as a field crop was the result of experimental work by U.S. Department of Agriculture scientists in cooperation with Elizabeth C. White of Burlington County, New Jersey. (Herbert G. Schmidt. Agriculture in New Jersey: A Three-Hundred-Year History. New Brunswick, N.J.: Rutgers University Press, 1973. 335 pp., notes, biblio., index.)

1911. The first Farm Bureau was formed in Broome County, New York. (Orville M. Kile. The Farm Bureau Through Three Decades. Baltimore, Md.: The Waverly Press, 1948. 416 pp., index.)

1911, March 1. Weeks' law providing for Federal purchase of forest lands to protect the watersheds of navigable streams was approved. (G. R. Salmond and A. R. Croft, "The Management of Public Watersheds," Yearbook of Agriculture, U.S. Dept. Agr., 1955, pp. 191-198.)

1912-1917. The U.S. Department of Agriculture developed Columbia sheep in an effort to contribute stability to the production of large range ewes in Laramie, Wyoming. (Ralph W. Phillip, "Breeding Better Livestock," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 33-56.)

1912. In response to urgent requests from producers and handlers, the Congress passed an apple grading law. (Roy W. Lennartson, "Standards, Grades, and Inspection--'Through the Years,'" Agricultural Marketing 8:22-25. May 1963.)

1912. The Congress passed the Seed-Importation Act to prohibit entry into the United States of certain adulterated grains and seeds unfit for seeding purposes. (R. A. Oakley, "The Seed Supply of the Nation," Yearbook of Agriculture, U.S. Dept. Agr., 1917, pp. 497-536.)

1912. Marquis wheat, which had been developed by A. P. Sanders in Canada in 1892, was introduced into the United States. (J. W. Morrison, "Marquis Wheat--A Triumph of Scientific Endeavor," Agricultural History 34:182-188. Oct. 1960.)

1912, August 20. The Plant Quarantine Act was approved. (Beverly T. Galloway, "Plant Pathology; A Review of the Development of the Science in the United States," Agricultural History 2:49-60. Apr. 1928.)

1912, August 24. The parcel post system was established by act of Congress. (Gerald Cullinan. The Post Office Department. New York, N.Y.: Frederick A. Praeger, 1968. 272 pp., index.)

1913. A migratory bird law was enacted by the Congress. The Migratory-Bird Treaty Act, approved by the President on July 3, 1918, contained more effective provisions for protecting birds. (George A. Lawyer, "Federal Protection of Migratory Birds," Yearbook of Agriculture, U.S. Dept. Agr., 1918, pp. 303-316.)

1913. The Bull Tractor Company introduced a 4,650 pound machine, the "Bull with the Pull," which was the forerunner of the light tractor. (Reynold M. Wik, "Henry Ford's Tractors and American Agriculture," Agricultural History 38:79-86. Apr. 1964.)

1913, March 4. The Congress passed the Marketing Studies Act which provided for marketing and distribution studies (37 Stat. 854).

1913, March 4. The Congress appropriated \$50,000 to establish a Bureau of Markets in the U.S. Department of Agriculture. The Bureau was established on May 16, 1913. (James C. Malin, "The Background of the First Bills to Establish a Bureau of Markets, 1911-1912," Agricultural History 6:107-129. July 1932.)

1913, March 4. The Virus-Serum Toxin Act was approved. (John M. Mejl, "Veterinary Biologics," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 266-270.)

1913, March 6. David Franklin Houston, (February 17, 1866-September 2, 1940) of Missouri served as Secretary of Agriculture from March 6, 1913, to February 2, 1920. (David F. Houston. Eight Years With Wilson's Cabinet, 1913 to 1920; With a Personal Estimate of the President. 2 Vols. Garden City, N.Y.: Doubleday, 1926. 729 pp., illus., index.)

1913, April 1. The State extension service at the University of Idaho hired the first full-time entomologist. The appointment occurred 1 year before the Smith-Lever Act was passed. (M. P. Jones, "Extension Work in Entomology," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 457-462.)

1913, May 16. The Office of Markets, the first marketing agency, was established in the U.S. Department of Agriculture. This marked the formal beginning of organized marketing programs in the Federal Government. (Caroline B. Sherman, "The Legal Basis of the Marketing Work of the United States Department of Agriculture," Agricultural History 11:289-301. July 1937.)

1913, December 23. The Federal Reserve Act was approved. (Harry J. Carman and others. A History of the American People; Vol. II: Since 1865. 2d ed, rev. New York: Alfred A. Knopf, 1952. 1001 pp., biblio., index.)

1914. The establishment of the Federal-State Extension Service was a major step in direct education for farmers. (Glen T. Barton, "Our Food Abundance," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 16-24.)

1914. Edwin Brown Fred of the University of Wisconsin began to supply cultures of nitrogen-fixing bacteria to growers of legumes for the purpose of increasing the plants' nitrogen-fixing capacity. (Diane Johnson. Edwin Brown Fred: Scientist, Administrator, Gentleman. Madison, Wis.: University of Wisconsin Press, 1974. 179 pp., notes, index.)

1914. The U.S. Department of Agriculture sent out a refrigerator car bearing the inscription, "U.S. Department of Agriculture, Poultry and Egg Demonstration Car," to encourage farmers to reduce \$50 million worth of eggs wasted. (M. E. Pennington and others, "The Egg and Poultry Demonstration Car Work in Reducing Our \$50,000,000 Waste in Eggs," Yearbook of Agriculture, U.S. Dept. Agr., 1914, pp. 363-380.)

1914, May 8. The Smith-Lever Act formalized cooperative agricultural extension work. (Gladys L. Baker. The County Agent. Chicago, Ill.: The University of Chicago Press, 1939. 226 pp., biblio., index.)

1914, August 1. World War I began in Europe.

1914, August 18. The Cotton Futures Act was passed; it was found to be unconstitutional and was reenacted as part of the Appropriation Act on August 11, 1916. It prescribed rules and regulations under which the sale of cotton for future delivery was to be conducted by any exchange, board of trade, or similar organization. (U.S. Department of Agriculture. Agricultural Marketing Service. Cotton Division. The Classification of Cotton. U.S. Dept. Agr., Misc. Pub. 310. Rev. ed. Washington, D.C.: GPO, 1956. 56 pp., illus.)

1915. A market reporting service for fresh fruits and vegetables was inaugurated. In 1917, market inspection was started as a war measure, and it was made a part of the regular work of the U.S. Department of Agriculture the following year. (U.S. Department of Agriculture. Agricultural Marketing Service. Agricultural Marketing Service: Organization and Functions. Washington, D.C. Mar. 1940. 97 pp.)

1915. Refrigerated warehouse construction began on a large scale, especially in meat-packing plants. (James A. Mixon and Harold D. Johnson, "How To Launch A New Product," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 382-388.)

1915. The Nonpartisan League was organized in North Dakota. It was considered as perhaps the most radical agricultural political movement in the history of the Middle West. (Robert L. Morlan. Political Prairie Fire. Minneapolis, Minn.: University of Minnesota Press, 1955. 408 pp., biblio., index.)

1915. Studies were made of precooling to prevent decay in red raspberries. This was the beginning of research that led to precooling as an established agricultural practice. (E. M. Chace, "Fruit Products Preserved Successfully by Freezing With Solid Carbon Dioxide," Yearbook of Agriculture, U.S. Dept. Agr., 1931, pp. 268-270.)

1915, March. The first official market news report carried the prices paid for the season's first strawberries from Hammond, Louisiana. (George Grange, "Market Intelligence," Agricultural Marketing 8:19-21. May 1963.)

1915, August 16. Daily reports were begun on price quotations in bona fide spot cotton markets. These are the oldest national daily reports currently published by the U.S. Department of Agriculture. (Sterling R. Newell, "Reporting Supplies and Markets," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 175-179.)

1916. The Congress enacted legislation creating the National Park Service in the U.S. Department of the Interior. (Marion Clawson. The Federal Lands: Their Use and Management. Baltimore, Md.: Johns Hopkins Press, 1957. 501 pp., index.)

1916. The Cooperative League of the United States of America (CLUSA) was organized as a society of individuals devoted to consumer cooperation. (Clarke A. Chambers, "The Cooperative League of the United States of America, 1916-1961: A Study of Social Theory and Social Action," Agricultural History 36:59-81. Apr. 1962.)

1916. The National Milk Producers' Federation was formed; in 1923, "Cooperative" was added to its title. (Andrew W. McKay, "Beginning With Ben Franklin," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 243-249.)

1916, July 11. The Federal Aid Road Act authorized appropriations for continuation of highway construction. (V. O. Key, Jr. The Administration of Federal Grants to States. Chicago, Ill.: Committee on Public Administration of the Social Science Research Council by Public Administration Service, 1937. 388 pp., index.)

1916, July 17. The Federal Farm Loan Act, providing for 12 farmland banks, was approved. The law grew out of Country Life Commission recommendations. (Murray R. Benedict. Farm Policies of the United States, 1790-1950. New York: The Twentieth Century Fund, 1953. 548 pp., index.)

1916, August 11. The U.S. Warehouse Act, authorizing licensing, bonding, and inspection of public warehouses storing agricultural products, was approved. (Roy L. Newton and James M. Workman, "Cotton Warehousing--Benefits of an Adequate System," Yearbook of Agriculture, U.S. Dept. Agr., 1918, pp. 399-432.)

1916, August 16. The U.S. Grain Standards Act authorized official standards for grain and required inspection of grain sold by grade in interstate or foreign commerce. (Ralph H. Brown, "The Farmer and Federal Grain Supervision," Yearbook of Agriculture, U.S. Dept. Agr., 1918, pp. 335-346.)

1916, August 31. The U.S. Standard Container Act established capacities for baskets used for certain agricultural products. It was later supplemented by the Standard Container Act of 1928, approved on May 21. (L. C. Carye and others, "Whys and Hows of Modern Packaging," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 132-141.)

1916, October. Livestock Market News was started. In 1918, the reporting service was expanded to include daily reporting of livestock supplies, prices, and trade conditions in Chicago, Omaha, Kansas City, and South St. Paul. (U.S. Congress. House Committee on Agriculture. Research and Related Services in the United States Department of Agriculture. 81st Cong., 2d sess. Washington, D.C.: GPO, 1951. pp. 1817-2729.)

1916, December 1. Federal standards for shelled corn (announced on September 1) became effective.

1917. A system for growing modern hybrid seed corn was developed by Donald F. Jones. (R. W. Allard. Principles of Plant Breeding. New York: John Wiley & Sons, Inc., 1960. 485 pp., index.)

1917. As the result of World War I, U.S. agricultural production was vastly increased to supply a tremendous foreign market. (Herbert Hoover. The Ordeal of Woodrow Wilson. New York: McGraw-Hill Book Co., Inc., 1958. 318 pp., index.)

1917. The European corn borer was discovered near Boston, Massachusetts. (William G. Bradley, "The European Corn Borer," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 614-621.)

1917. Japanese beetles were discovered in New Jersey. (Charles H. Hadley and Walter E. Fleming, "The Japanese Beetle," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 567-573.)

1917. Kansas Red wheat was developed.

1917, February 23. The Smith-Hughes Vocational Education Act was approved. (Alfred C. True. A History of Agricultural Education in the United States, 1785-1925. U.S. Dept. Agr., Misc. Pub. No. 36. Washington, D.C.: GPO, 1929. 436 pp.)

1917, April 6. The United States entered World War I.

1917, July 1. The U.S. Department of Agriculture's official standards for wheat became effective. (Robert E. Post and Edward J. Murphy, "Wheat, A Food Grain," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 413-424.)

1917, July 20. The National Board of Farm Organizations was created. It dissolved in 1929. (James L. Guth, "The National Board of Farm Organizations," Agricultural History 48:418-440. July 1974.)

1917, August 10. The Lever Act was passed authorizing price fixing of commodities, licensing of producers and distributors, and prohibiting "unfair" trade practices. (Frank W. Surface. The Grain Trade During the World War, Being A History of the Food

Administration Grain Corporation and the United States Grain Corporation. New York: The Macmillan Co., 1928. 679 pp., index.)

1917, August 10. President Wilson established the Food Administration by Executive order. (William C. Mullendore. History of the United States Food Administration, 1917-1919. Stanford, Calif.: Stanford University Press, 1941. 399 pp., illus., index.)

1917, August 10. The Food and Fuel Control Act was approved. (Francis W. O'Brien, ed. The Hoover-Wilson Wartime Correspondence, September 24, 1914 to November 11, 1918. Ames, Ia.: Iowa State University Press, 1974. 297 pp.)

1917, August 10. The Food Production Act was approved. (Almon R. Wright, "World War Food Controls and Archival Sources for Their Study," Agricultural History 15:72-83. Apr. 1941.)

1917, August 30. President Wilson fixed the minimum price of wheat at \$2.20 a bushel, but raised it to \$2.26 on June 21, 1918. (A. B. Genung, "Agriculture in the World War Period," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 277-296.)

1917, September 1. The Grain Corporation of the Food Administration began operations. (William C. Mullendore. History of the United States Food Administration 1917-1919. Stanford, Calif.: Stanford University Press, 1941. 399 pp., illus., index.)

1917, September 10. U.S. grade standards for potatoes were issued. They represented the first official grade standard for a fruit or vegetable issued by the U.S. Department of Agriculture. (Charles W. Hauck, "Research as a Basis for Grading Fruits and Vegetables," Journal of Farm Economics 18:393-404. May 1936.)

1917, November 13. The Food Administration announced hog price supports fixed at a level in relation to corn, but this price was not maintained. (Arthur G. Peterson. Price Administration, Priorities, and Conservation of Supplies Affecting Agriculture in the United States, in 1917-18. U.S. Dept. Agr., Bur. Agr. Econ., Agr. History Ser. No. 3. Washington, D.C.: Nov. 1941. 16 pp.)

1917, December. The "Live Stock and Meat Trade News," a weekly bulletin was inaugurated by the Bureau of Markets to relate important items concerning the livestock industry. (James Atkinson, "Government Market Reports on Live Stock and Meats," Yearbook of Agriculture, U.S. Dept. Agr., 1918, pp. 379-398.)

1918. Ceres wheat was developed by L. R. Waldron of North Dakota. (Glenn S. Pound, "Plant Disease Toll Is Cut With Resistant Varieties," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 66-74.)

1918. Attempts were first made to control insects by using airplanes to dump poison dust on crops. In 1921, a specially equipped airplane was demonstrated. (Kenneth Messenger and W. L. Popham, "From 0 to 5,000 in 34 Years," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 250-251.)

1918. W. W. Garner and H. A. Allard conducted research on photoperiodism, the period of daily illumination required for the normal growth and maturity of a plant. (Harry A. Borthwick, "Plants and Light," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 116-123.)

1918. The development of a system for growing modern hybrid seed corn was completed by Donald F. Jones. (G. F. Sprague, "Hybrid Corn," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 106-107.)

1918. The Grange League Federation was organized. (Joseph G. Knapp. Seeds That Grew, A History of the Cooperative Grange League Federation Exchange. Hindsdale, N.Y.: Anderson House, 1960. 537 pp., index.)

1918. The first livestock market news reports **were issued** in Chicago.

1918. The Railroad Administration adopted improvements in the refrigerator car design which had been developed by the U.S. Department of Agriculture during research begun in 1905.

1918. The Bureau of Markets issued the first publication on suitable storage of perishable food products.

1918, January 26. Food Administrator Herbert C. Hoover asked for voluntary observance of wheatless Mondays and Wednesdays, meatless Tuesdays, porkless Thursdays and Saturdays, and the use of victory bread. (Maxey R. Dickson. The Food Front in World War I. American Council on Public Affairs. Washington, D.C.: Monumental Printing Co., 1944. 194 pp., index.)

1918, June 18. A Presidential proclamation required stockyards and livestock dealers to be licensed. This was the first Federal regulation of livestock market practices. (Elmer R. Kiehl and V. James Rhodes. Historical Development of Beef Quality and Grading Standards. Agricultural Experiment Station, Res. Bull. No. 728. Columbia, Mo.: University of Missouri, Feb. 1960. 60 pp.)

1918, July 1. Sugar rationing went into effect. (Harvey C. Mansfield and Associates. A Short History of OPA. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1948. 332 pp., index.)

1918, July 1. The Sugar Equalization Board was incorporated to allocate and distribute sugar supplies; to a large extent, it supplanted the International Sugar Committee. (Almon R. Wright, "Food Purchases of the Allies, 1917-1918," Agricultural History 16:97-102. Apr. 1942.)

1918, November 11. World War I ended. (Edward L. Katzenbach, Jr., "The Mechanization of War, 1880-1919." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. pp. 548-561.)

1918, December 23. All food regulations were suspended by the Food Administration. (Frank M. Surface and Raymond L. Bland. American Food in the World War and Reconstruction Period; Operations of the Organizations Under Direction of Herbert Hoover, 1914 to 1924. Stanford, Calif.: Stanford University Press, 1931. 1033 pp., illus., maps, diagrams, index.)

1919. The first U.S. standards for grades of butter and cheddar cheese were issued after the dairy products grading service of the U.S. Department of Agriculture, authorized by an act of Congress, was inaugurated. (Merritt W. Baker, "Grades and Grading," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 157-164.)

1919. National Country Life Association was organized with Kenyon Butterfield as president. (William L. Bowers. The Country Life Movement in America, 1900-1920. Port Washington, N.Y.: Kennikat Press, 1974. 189 pp.)

1919. American farmers planted 76 million acres of wheat as compared with 50 million acres planted before World War I.

1919, February 14. The Agricultural History Society was organized. (Wayne D. Rasmussen, "Forty Years of Agricultural History," Agricultural History 33:177-184. Oct. 1959.)

1919, June. The first issue of Capper's Farmer was published. (Homer E. Socolofsky, "The Development of the Capper Farm Press," Agricultural History 31:34-43. Oct. 1957.)

1920-22. Enclosed gears were developed for the tractor. (Donnell R. Hunt. Farm Power and Machinery Management. 5th ed. Ames, Ia.: Iowa State University, 1968. 292 pp., illus., index.)

1920. Railroad track, which extended to all major agricultural areas, reached its peak of 250,000 miles. (John C. Winter, "A Century of Progress," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 99-103.)

1920. The Transportation Act changed the Government's policies towards railroads to encourage cooperation between railroads, to give the Interstate Commerce Commission greater power, and to guarantee the railroads a fair rate of return. (U.S. Congress. Senate Committee on Agriculture and Forestry. Prelude to Legislation to Solve the Growing Crisis in Rural Transportation. 94th Cong., 1st sess. Committee Print. Washington, D.C.: GPO, 1975. 351 pp.)

1920. The foreign market for farm products began to decline; wartime agricultural prices collapsed, and a long-term agricultural depression began. (James R. Connor, "National Farm Organizations and United States Tariff Policy in the 1920's," Agricultural History 32:32-43. Jan. 1958.)

1920. Harry Steenbock of the Wisconsin Agricultural Experiment Station discovered a way to recover vitamin A in its pure form. (W. H. Glover. Farm and College. Madison, Wis.: University of Wisconsin Press, 1952. 462 pp., index.)

1920. Total U.S. population reached 105,710,620; farm population, 31,614,269; 27 percent of persons gainfully employed were engaged in agriculture.

1920, February 2. Edwin Thomas Meredith (December 23, 1876-June 17, 1928) of Iowa served as Secretary of Agriculture from February 2, 1920 to March 4, 1921. (Peter L. Petersen, "The Reluctant Candidate: Edwin T. Meredith and the 1924 Democratic National Convention," Palimpsest, 57:146-155. Sept.-Oct. 1976.)

1920, March 3. The American Farm Bureau Federation was formally organized and its constitution ratified. (Orville M. Kile. The Farm Bureau Through Three Decades. Baltimore, Md.: Waverly Press, 1948. 416 pp., illus., index.)

1920, May. Government guarantees on wheat prices ended. (C. R. Ball, "Wheat Production and Marketing," Yearbook of Agriculture, U.S. Dept. Agr., 1921, pp. 77-160.)

1921. The U.S. Department of Agriculture Graduate School was established. (David E. Brewster, "USDA's Graduate School: The Growth of an Educational Institution." In: Developing State and Local Leadership In a Changing Society. Frederick E. Fisher, ed. Washington, D.C.: Graduate School Press, 1973, pp. 91-101.)

1921. The Farm Bloc was organized in the Congress to support agricultural legislation independent of party lines. (Homer E. Socolofsky. Arthur Capper. Lawrence, Kans.: University of Kansas Press, 1962. 283 pp., notes, index.)

1921. The first Federal-State cooperative agreement for inspection of fresh fruits and vegetables was signed by the U.S. Department of Agriculture and the State of Washington.

1921, March 5. Henry Cantwell Wallace (May 11, 1866-October 26, 1924) of Iowa served as Secretary of Agriculture from March 5, 1921 to October 25, 1924. (Donald L. Winters. Henry Cantwell Wallace as Secretary of Agriculture, 1921-1924. Urbana, Ill.: University of Illinois Press, 1970. 313 pp., index.)

1921, May 21. The first farm market news radio report was broadcast over station KDKA, Pittsburgh, Pennsylvania. (Layne Beaty, "Radio and Television," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 89-95.)

1921, May 31. Senator George Norris introduced a bill calling for export of agricultural commodities by a Government corporation. (James H. Shideler. Farm Crisis, 1919-1923. Berkeley, Calif.: University of California Press, 1957. 345 pp., notes, index.)

1921, August 3. A World War I airplane was used to spread lead arsenate dust on a grove of catalpa trees near Dayton, Ohio. (D. A. Isler, "Aircraft in Agriculture," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 157-163.)

1921, August 15. The Packers and Stockyards Act authorized the Secretary of Agriculture to regulate meatpackers and livestock trading practices at public markets having an area of 20,000 square feet or more. (M. F. Cook, "Agents and Buyers," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 280-285.)

1921, August 24. The Grain Futures Trading Act was passed. It was invalidated by the Supreme Court, was revised, and became the Grain Futures Act of 1922. (Report of the Secretary. "The Grain Futures Act," Yearbook of Agriculture, U.S. Dept. Agr., 1922, pp. 48-49.)

1921, November. Depressed prices placed many farmers in a squeeze. Secretary of Agriculture Henry Wallace estimated the purchasing power of the principal farm crops to be little more than half the average for the period 1910 to 1914. (Reynold M. Wik, "Henry Ford and the Agricultural Depression of 1920-1923," Agricultural History 29:15-22. Jan. 1955.)

1922. U.S. Department of Agriculture engineers and entomologists, in an effort to protect the cotton crop against boll weevil, developed a method for dusting cottonfields with calcium arsenate. (H. H. Stage and Frank Irons, "Air War Against Pests," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 835-838.)

1922. H. S. Fawcett, a plant pathologist at the University of California Citrus Experiment Station discovered that heat would control brown rot on lemons. This treatment was later used on other fruits. (Harold T. Cook, "Putting the Heat on Peaches and Papayas," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 351-354.)

1922. In their publication, Equality for Agriculture, George N. Peek and Hugh S. Johnson advocated an export plan for farm surpluses. (Gilbert C. Fite. George N. Peek and the Fight for Farm Parity. Norman, Okla.: University of Oklahoma Press, 1954. 314 pp., index.)

1922. The first electrically heated and electrically regulated incubator used for chickens was patented by Ira M. Petersime. (Robert F. Cook and others, "How Chicken on Sunday Became an Anyday Treat," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 125-132.)

1922. Elmer V. McCollum and his coworkers at the Wisconsin Experiment Station separated vitamin A from the rickets curative agent; this led to the discovery of vitamin D. (S. J. Ritchey, "Are We What We Eat? Nutrition and Health," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 289-298.)

1922. The Fordney-McCumber Tariff Act permitted a Presidential proclamation, issued on the basis of cost investigations, to raise or lower rates specified by the Congress. (Helen C. Farnsworth. Wheat Growers and the Tariff. Carnegie Endowment for International Peace. Agricultural Series No. 4. Berkeley, Calif.: University of California Press, 1946. 29 pp.)

1922. Surplus, which became the chief agricultural issue, was first attacked principally as a marketing problem and later as a marketing and production problem.

1922. The Illinois Agricultural Association attempted voluntary corn-acreage reduction.

1922, January 23-27. The National Agricultural Conference met in Washington, D.C. (Chester C. Davis, "The Development of Agricultural Policy Since the End of the World War," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 297-326.)

1922, February 18. The Capper-Volstead Act declared that a cooperative association was not, by reason of the manner in which it was organized and normally operated, a combination in restraint of trade in violation of the Federal antitrust statutes. (E. A. Stokdyk, "Cooperative Marketing by Farmers," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 684-695.)

1922, April. In cooperation with the Post Office, the U.S. Department of Agriculture initiated a rural carrier survey; in June 1922, the first Pig Survey Report was initiated. (Joseph A. Becker and C. L. Harlan, "Developments in Crop and Livestock Reporting Since 1920," Journal of Farm Economics 21:799-827. Nov. 1939.)

1922, June 3. The Federal Reserve Act was amended to provide agricultural representation on the Federal Reserve Board. (Paul M. Warburg. The Federal Reserve System, Its Origin and Growth: Reflections and Recollections. New York: The Macmillan Co., 1930. 2 vols., diagrams, index.)

1922, July 1. The Bureau of Markets and Crop Estimates was combined with the Office of Farm Management and Farm Economics to form the Bureau of Agricultural Economics. (Lloyd S. Tenny, "The Bureau of Agricultural Economics--The Early Years," Journal of Farm Economics 29:1017-1026. Nov. 1947.)

1922, August 31. The Honeybee Act was passed prohibiting the importation of adult honey bees (42 Stat. 833). (Ivan H. Rainwater and Claude A. Smith, "Quarantines--First Line of Defense," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 216-224.)

1922, September 21. The Grain Futures Act was approved. (Homer E. Socolofsky. Arthur Capper: Publisher, Politician, and Philanthropist. Lawrence, Kans.: University of Kansas Press, 1962. 283 pp., index.)

1922, September 21. The Commodity Exchange Act was passed to regulate trading in certain commodity exchanges. (Neil Brooks, "The Wide Range of Regulation," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 255-265.)

1923. The Santa Gertrudis breed of cattle was established in Texas using a partly Shorthorn and partly Brahman bull. (J. T. Schlebecker. Cattle Raising on the Plains, 1900-1961. Lincoln, Nebr.: University of Nebraska Press, 1963. 323 pp., index.)

1923. The Filled Milk Act was passed prohibiting substitution of any fat or oil for milk fat in milk and cream, with certain exceptions for infant foods. (Francis E. McLaughlin, "The Food and Drug Administration," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 290-296.)

1923. The first annual farm outlook conference was held. (J. P. Cavin, "Interpreting the Facts," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 536-542.)

1923. W. M. Stanley isolated the tobacco mosaic virus; with this discovery, it was established that viruses are the causative agents for many plant diseases. (Nelson F. Waters, "Genetics and Disease," Yearbook of Agriculture, U.S. Dept. Agr., 1956, pp. 46-54.)

1923. The Congressional distribution of seeds was discontinued. (Knowles A. Ryerson, "History and Significance of the Foreign Plant Introduction Work of the United States Department of Agriculture," Agricultural History 7:110-128. July 1933.)

1923, March 3. The Naval Stores Act authorized official standards for naval stores which included methods for analysis, inspection, grading, regulation of labeling, advertising, and packing. (Thomas W. Gamble, comp. Naval Stores: History, Production, Distribution and Consumption. Savannah, Ga.: Review Publishing & Printing Co., 1921. 286 pp.)

1923, March 4. The U.S. Cotton Standards Act authorized cotton standards and a cotton classification service on a fee basis. (U.S. Department of Agriculture. Bureau of Agricultural Economics. The United States Cotton Standards Act. Bur. of Agr. Econ. Serv. Reg. Announcement No. 82. Washington, D.C., 1924. 12 pp.)

1923, March 4. The Agricultural Credits Act was passed setting up a Federal Intermediate Credit Bank in each Federal Reserve District for the purpose of making loans to farmers for intermediate periods between the usual long- and short-term loans. (Donald C. Horton. Patterns of Farm Financial Structure. National Bureau of Economic Research. Princeton, N.J.: Princeton University Press, 1957. 185 pp., index.)

1923, July 1. The Office of the Director of Extension Work and the Extension Service were established. (Clarence B. Smith and Meredith C. Wilson. The Agricultural Extension System of the United States. New York: John Wiley & Sons, Inc., 1930. 402 pp., index.)

1924. Under authority of the Organic Act of 1897, the Gila Wilderness in New Mexico became the first official wilderness in the National Forest System. (Nolan O'Neal, "Wilderness Lands for Learning," Yearbook of Agriculture, U.S. Dept. Agr., 1971, pp. 47-51.)

1924. The Fairway Farms was organized as a nationwide demonstration of landlord-tenant relations, proper farm size, organization and equipment of farms, and desirable patterns of land use. (Roy E. Huffman, "Montana's Contributions to New Deal Farm Policy," Agricultural History 33:164-167.)

1924. The first planes designed specifically for crop dusting operations were used in the Mississippi Delta for the first commercial cotton dusting under contract. (David A. Isler, "Aircraft in Agriculture," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 157-163.)

1924. Despite the business community's attempts to bale out the farmers, the latter's energies were channeled into the McNary-Haugen campaign, with its demand for "Equality for Agriculture." (John Philip Gleason, "The Attitude of the Business Community Toward Agriculture During the McNary-Haugen Period," Agricultural History 32:127-138. Apr. 1958.)

1924. The International Harvester Company, having acquired all rights to the Price-Campbell spindle-type cotton picking machine, experimented with mechanical harvesters and, in 1941, finally perfected a one-row high drum picker for commercial sale. (Gilbert C. Fite, "Recent Progress in the Mechanization in Cotton Production in the United States," Agricultural History 24:19-28. Jan. 1950.)

1924. Clarence Birdseye introduced the idea of freezing fish in dressed ready-to-cook form. (E. O. Anderson, Jr. Refrigeration in America. Princeton, N.J.: Princeton University Press, 1953. 344 pp., index.)

1924, January 16. The first McNary-Haugen farm relief bill was introduced into the Congress. (Darwin N. Kelley, "The McNary-Haugen Bills, 1924-1928: An Attempt To Make the Tariff Effective for Farm Products," Agricultural History 14:170-180. Oct. 1940.)

1924, June 7. The Clarke-McNary law extended the Federal purchase policy of the Weeks law of 1911. Section 2 of the Clarke-McNary law authorized the Secretary of Agriculture to enter into cooperative agreements with the States to protect State and private forests against fire. State and private owners were to contribute not less than half the total cost. Other sections of the act provided for studies of forest taxation; cooperation with the States in the production and distribution of forest planting stock for wind-breaks, shelterbelts, and farm woodlands; and cooperative work in farm forestry extension. This law greatly expanded Federal-State cooperation in forest work. (W.S. Swingler and Frank A. Connolly, "Programs for Forest Management," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 402-514.)

1924, November 7. President Coolidge appointed a nine-member President's Agricultural Conference. (Edwin R. Seligman. The Economics of Farm Relief; A Survey of the Agricultural Problem. New York: Columbia University Press, 1929. 303 pp., index.)

1924, November 22. Howard Mason Gore (October 12, 1877-June 20, 1947) of West Virginia served as Secretary of Agriculture from November 22, 1924 to March 4, 1925. (Arthur W. Macmahon and John D. Millett. Federal Administrators; A Biographical Approach to the Problem of Departmental Management. New York: Columbia University Press, 1939. 524 pp., index.)

1925-30. The average annual value of agricultural exports was \$1.79 billion, or 37.1 percent of all exports.

1925. The American Institute of Cooperation was established. (Joseph G. Knapp. The Advance of American Cooperative Enterprise: 1920-1945. Danville, Ill.: The Interstate Printers & Publishers, Inc., 1973. 646 pp., index.)

1925. The Magness-Taylor pressure tester was introduced. It subsequently became a standard instrument throughout the world for measuring firmness (ripeness) of apples and pears. An improved version of this tester, developed by the U.S. Department of Agriculture, is known as the "mechanical thumb." (Harold T. Cook, "Where Quality is Commonplace," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 89-94.)

1925. The Master Farmer movement began as a means of dignifying agriculture, honoring outstanding individuals in this occupation, and setting forth examples for farm boys and girls. (Clifford V. Gregory. "The Master Farmer Movement," Agricultural History 10:47-58. April 1936.)

1925, January 30. The Hoch-Smith resolution was passed granting rate reductions on farm commodities. (Dwight M. Blood, "The Impact of Transportation Rate Structure on the Movement of Agricultural Commodities," Journal of Farm Economics 46:1297-1305. Dec. 1964.)

1925, February 24. The Purnell Act, providing funds for economic and sociological research carried on by State experiment stations, was passed. (Murray R. Benedict. Can We Solve the Farm Problem? New York: Twentieth Century Fund, 1955. 601 pp., index.)

1925, March 5. William Marion Jardine (January 16, 1879-January 17, 1955) of Kansas served as Secretary of Agriculture from March 5, 1925 to March 4, 1929. (M. N. Beeler, "Jardine--Our New Secretary," Farm Journal 49:24. 1925.)

1926. The Seed Importation Act of 1912 was amended to prohibit interstate shipment of any falsely and fraudulently labeled seeds and to require that all imported alfalfa or red clover seed be colored to indicate the degree of adaptability to a particular climate. (S. F. Rollin and Frederick A. Johnston, "Our Laws That Pertain to Seeds," Yearbook of Agriculture, U.S. Dept. Agr., 1961, pp. 482-492.)

1926. Research was started by the DuPont Laboratories on nylon, although commercial production did not begin until 1938. (Bernice M. Hornbeck, "Fibers Made by Man," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 258-260.)

1926. A successful light gasoline tractor was developed. (Fred R. Jones. Farm Gas Engines and Tractors. 4th ed. New York: McGraw-Hill Book Co., Inc., 1963. 513 pp., illus., biblio., index.)

1926. Henry A. Wallace developed commercial hybrid seed corn. (A. Richard Crabb. The Hybrid-Corn Makers: Prophets of Plenty. New Brunswick, N.J.: Rutgers University Press, 1947. 331 pp., index.)

1926. Fairway Farms Corporation, directed by M. L. Wilson of Montana State College, demonstrated that individual farmers could help themselves by adapting techniques suited to their own environment. (William D. Rowley. M. L. Wilson and the Campaign for the Domestic Allotment. Lincoln, Nebr.: University of Nebraska Press, 1970. 219 pp., notes, biblio., index.)

1926. The export debenture plan was proposed to solve the farm problem. (Joseph S. Davis. The Farm Export Debenture Plan. Food Research Institute, Misc. Pub. No. 5. Dec. 1929. 274 pp.)

1926, February 1. The domestic allotment plan was proposed to raise farm prices and income. (John D. Black. Agricultural Reform in the United States. New York: McGraw-Hill Book Co., Inc., 1929. 501 pp., index.)

1926, July 2. The Congress passed the Cooperative Marketing Act, which created a Division of Cooperative Marketing in the U.S. Department of Agriculture. (J. G. Knapp. Advance of American Cooperative Enterprise: 1920-1945. Danville, Ill.: Interstate Printers & Publishers, 1973. 646 pp., index.)

1926, November 15. Inspection of live poultry by the U.S. Department of Agriculture was inaugurated. (Robert J. Lee and Henry W. Harper, "Meat and Poultry Inspection," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 280-289.)

1927. Federal grading of beef was initiated. (Harold F. Breimyer, "Fifty Years of Federal Marketing Programs," Journal of Farm Economics 45:749-758. Nov. 1963.)

1927. The Congress approved a bill that directed the Secretary of Agriculture to establish and maintain a national arboretum for purposes of research and education involving tree and plant life. (Henry T. Skinner, "The National Arboretum," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 272-274.)

1927. John D. Rust invented the first successful spindle cotton picker and patented it on January 10, 1933. (James H. Street. The New Revolution in the Cotton Economy: Mechanization and Its Consequences. Chapel Hill, N.C.: University of North Carolina Press, 1957. 294 pp., illus., biblio., index.)

1927. The American Dairy Science Association resolved that cow-testing associations be called Dairy Herd Improvement Associations, and it established a Dairy Records Committee to review and revise rules for testing on a regular basis. (Gerald J. King, "The National Cooperative Dairy Herd Improvement Program," Dairy Herd Improvement Letter 49:1-47. July-Aug.-Sept. 1973.)

1927. The U.S. Department of Agriculture conducted intensive tests on methods and materials for removing lead-arsenate spray residues from apples and pears in order to meet domestic and export tolerances.

1927. The Federal inspection of eviscerated poultry was started on a voluntary basis.

1927, February 25. The McNary-Haugen bill was vetoed by President Calvin Coolidge. (J. Samuel Walker, "Henry A. Wallace As Agrarian Isolationist 1921-1930," Agricultural History 49:532-548. July 1975.)

1927, March 3. The Produce Agency Act prohibited fraudulent practices in consignment and disposal of perishable farm produce (44 Stat. 1355).

1927, July 1. The Food, Drug, and Insecticide Administration was established and assigned some regulatory functions of the former Bureau of Chemistry. On July 1, 1930, it was redesignated the Food and Drug Administration. (U.S. Department of Agriculture. The Food and Drug Administration of the United States Department of Agriculture. U.S. Dept. Agr., Misc. Pub. No. 48. Washington, D.C.: GPO, 1939. 22 pp.)

1928. The Capper-Ketcham Act provided extension work in agriculture and home economics for men, women, boys, and girls. (E. H. Shinn, "Boys' and Girls' Clubs Stress Farm, Home, and Community Requirements," Yearbook of Agriculture, U.S. Dept. Agr., 1930, pp. 148-149.)

1928. The Boulder Canyon Project Act was passed by Congress. (Wayne Thorne, "A Million Gallons of Water for a Single Acre of Food," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 237-248.)

1928. The Congress appropriated the first funds for soil erosion research by the Buchanan Amendment to the U.S. Department of Agriculture Appropriation Act. (J. Don Looper, "Who Should Pay For Conservation?" Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 236-242.)

1928. A U.S. Department of Agriculture bulletin by Hugh Hammond Bennett and W. R. Chapline warned the Nation of the danger of soil erosion. (Wellington Brink. Big Hugh, The Father of Soil Conservation. New York: Macmillan & Co., 1951. 167 pp., illus., index.)

1928. The discovery of penicillin was made by Alexander Fleming at St. Mary's Hospital in London. (Frank H. Stodola, "Penicillin: Breakthrough to the Era of Antibiotics," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 339-344.)

1928. Under authority of the U.S. Warehouse Act, the first grade standards for processed fruits and vegetables were issued for canned corn, canned peas, and canned tomatoes.

1928, May 17. The Wool Standards Act was approved. It authorized an appropriation of certain funds for wool standards and for other purposes by the Secretary of Agriculture (45 Stat. 593.)

1928, May 22. The McSweeney-McNary Act providing for a program of forest research was approved. (Earle H. Clapp, "The Dicennial of the McSweeney-McNary Act," Journal of Forestry 36:832-836. Sept. 1938.)

1928, May 25. The McNary-Haugen bill was vetoed for the second time by President Coolidge. (Alice M. Christensen, "Agricultural Pressure and Governmental Response in the United States, 1919-1929," Agricultural History 2:33-42. Jan. 1937.)

1928, October. When the airship Graf Zeppelin made her first trans-Atlantic voyage, seven species of insects and two plant diseases were found in bouquets of flowers; this demonstrated the importance of the airplane as a means of introducing plant pest (F. A. Johnston, "Aviation Brings Foreign Plant Pests and Makes Quarantine Necessary, Yearbook of Agriculture, U.S. Dept. Agr., 1934, pp. 142-144.)

1929. The National Chamber of Agricultural Cooperatives, later known as the National Council of Farmer Cooperatives, was established. (U.S. Department of Agriculture. Farmer Cooperative Service. Agricultural Cooperation--Pioneer to Modern. Bull. No. Reprint No. 4. Washington, D.C. 1965. 23 pp.)

1929. The "Great" Depression began. (L. H. Bean, "Farmers Specially Hard Hit Because Costs Have Not Fallen With Prices," Yearbook of Agriculture, U.S. Dept. Agr., 1933, pp. 91-95.)

1929. W. F. Gericke invented "hydroponics," the growing of plants in water. (Wayne Rasmussen, "Food For The Future." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University, 1967. pp. 414-427.)

1929. Utah placed an excise tax on margarine to discourage its consumption. By 193 half the States in the Union were taxing the sale of margarine. (E. L. Burtis and F. V. Waugh, "Barriers to Internal Trade in Farm Products," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 656-666.)

1929. Airplane seeding of rice was reported in California. (E. N. Bates, "Californ Rice Land Seeded by Airplane," Agricultural Engineering 11:69-70. Feb. 1930.)

1929, March 6. Arthur Mastick Hyde (July 12, 1877-October 17, 1947) of Missouri served as Secretary of Agriculture from March 6, 1929 to March 4, 1933. (Robert P. Friedman, "Arthur M. Hyde: Articulate Antagonist," Missouri Historical Review 55:226-234. Apr. 1961.)

1929, June. The Federal Farm Board was established. (George McGovern. Agricultural Thought in the Twentieth Century. Indianapolis, Ind.: The Bobbs-Merrill Co., Inc., 1967. 570 pp., index.)

1929, June 15. The Agricultural Marketing Act became law. (Alice M. Christensen, "Agricultural Pressure and Governmental Response in the United States, 1919-1929," Agricultural History 11:33-42. Jan. 1937.)

1929, October 6. The Mediterranean fruit fly was discovered in Florida, and an all-out program was instituted to combat it. (Vivian Wiser. Protecting American Agriculture: Inspection and Quarantine of Imported Plants and Animals. U.S. Department of Agriculture, Agricultural Economic Report No. 266. Washington, D.C., 1974. 58 pp., apps.)

1930. Severe drought plagued the Midwestern and Southern States. (Elmer Starch, "The Future of the Great Plains Reappraised," Journal of Farm Economics 31:917-927. Nov. 1949.)

1930. Between 1920 and 1930, the net migration from farms, mostly to the cities, was 6,000,000, with three-fourths of the migrants under 35 years of age. (O. E. Baker, "Farm Youth, Lacking City Opportunities, Face Difficult Adjustment," Yearbook of Agriculture, U.S. Dept. Agr., 1934, pp. 207-209.)

1930. Six to eight man-hours of labor were required to produce 1 acre (40 bushels) of corn with a 2-bottom gang plow, a 7-foot tandem disk, a 4-section harrow, a 2-row planter, a 2-row cultivator, and a 2-row picker.

1930. Three to four man-hours of labor were required to produce 1 acre (20 bushels) of wheat with a 3-bottom gang plow, a tractor, a 10-foot tandem disk, a harrow, a 12-foot combine, and trucks.

1930. Fifty-eight percent of all farms had cars, 34 percent had telephones, and 13 percent had electricity including home generating plants.

1930. The estimated average equity of farm operators in the land they farmed was 41 percent.

1930. Total U.S. population reached 122,775,046; farm population, 30,445,350; 21.5 percent of persons gainfully employed were engaged in agriculture.

1930, February 10. The Grain Stabilization Corporation was chartered under the auspices of the Federal Farm Board. (Clara Eliot. The Farmer's Campaign for Credit. New York: D. Appleton & Co., 1927. 312 pp., index.)

1930, May 23. The Plant Patent Act was approved. (American Nurseryman 120:6. Feb. 15, 1960.)

1930, June 5. The Cotton Stabilization Corporation was chartered under the auspices of the Federal Farm Board. (Frieda Baird and Claude I. Benner. Ten Years of Federal Intermediate Credit. Washington, D.C.: The Brookings Institution, 1933. 416 pp., illus., diagrams, index.)

1930, June 10. The Perishable Agricultural Commodities Act was approved. (Ted C. Curry, "Some Rules for the Produce Business," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 278-280.)

1930, July 8. The Congress approved a new amendment, the McNary-Mapes (or canners' bill) to the Food and Drug Act. (P. B. Dunbar, "Food and Drug Act is Made Stricter by Request of Canners," Yearbook of Agriculture, U.S. Dept. Agr., 1931, pp. 245-248.)

1930, December 20. The Drought Relief Act was passed (46 Stat. 1032).

1931. The Canned Fruit and Vegetable Inspection Service, later changed to the Processed Foods Inspection Service, was established in the Bureau of Agricultural Economics in the U.S. Department of Agriculture.

1931. The Federal meat grading service was extended to include lamb and veal.

1931, November 19-21. The National Conference on Land Utilization was called by the Secretary of Agriculture and the Association of Land-Grant Colleges and Universities. (Richard S. Kirkendall, "L. C. Gray and the Supply of Agricultural Land," Agricultural History 37:206-216. Oct. 1963.)

1932. The U.S. Department of Agriculture reported on extensive research in the use of carbon dioxide for retarding decay of fruits and vegetables which eventually led to the practical use of this method for protecting fruits in transit. (A. K. Balls and W. S. Hale, "Fruit Darkening Can Be Prevented by New Process," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 217-218.)

1932. Laws were approved on March 7 and July 5 for the distribution of Government-owned wheat and cotton to needed and distressed people by the American Red Cross.

(Josephine Chapin Brown. Public Relief 1929-1939. New York: Holt & Co., 1940. 524 pp., tables, diagrams, index.)

1932. Charles G. King of the University of Pittsburgh prepared pure crystals of vitamin C from lemon juice; it was the first vitamin to be isolated in pure form. (Elizabeth Neige Todhunter, "The Story of Nutrition," Yearbook of Agriculture, U.S. Dept. Agr., 1959, pp. 7-22.)

1932. Tenmarq wheat was first distributed.

1932, February. The National Land-Use Planning Committee was established, with L. C. Gray as executive secretary, as an outgrowth of the National Conference on Land Utilization held November 19-21, 1931. (R. S. Kirkendall. Social Scientists and Farm Politics in the Age of Roosevelt. Columbia, Mo.: University of Missouri Press, 1966. 358 pp., index.)

1932, April. The Wisconsin Cooperative Milk Pool was incorporated to dramatize the farmers' plight. (A. William Hoglund, "Wisconsin Dairy Farmers on Strike," Agricultural History 35:24-34. Jan. 1961.)

1932, May. The Farm Holiday Movement was led by Milo Reno. (John L. Shover, "The Farmers' Holiday Association Strike, August 1932," Agricultural History 39:196-203. Oct. 1965.)

1933. The Suter-Webb cotton fiber measure was invented and was used worldwide. A public service patent was granted to the U.S. Department of Agriculture.

1933, March 4. Henry A. Wallace (October 7, 1888-November 18, 1965) of Iowa served as Secretary of Agriculture from March 4, 1933 to September 4, 1940. (Edward L. and Frederick H. Schapsmeier. Henry A. Wallace of Iowa: The Agrarian Years, 1910-1940. Ames, Ia.: The State University Press, 1968. 327 pp., biblio., index.)

1933, March 31. The Congress passed the Unemployment Relief Act which established Emergency Conservation Work, later called the Civilian Conservation Corps. (John A. Salmond. Civilian Conservation Corps, 1933-1942: A New Deal Case Study. Durham, N.C.: Duke University Press, 1967. 240 pp., biblio., index.)

1933, April 17. The first Civilian Conservation Corps camp, Camp Roosevelt in George Washington National Forest, was occupied. (U.S. Department of Agriculture. Soil Conservation Service. The CCC at Work, A Story of 2,500,000 Young Men. Washington, D.C.: GPO, 1942. 103 pp.)

1933, May 12. The Agricultural Adjustment Administration was established. (Edwin G. Nourse, and others. Three Years of the Agricultural Adjustment Administration. Washington, D.C.: The Brookings Institution, 1937. 600 pp., index.)

1933, May 12. The Emergency Farm Mortgage Act was approved. (Norman J. Wall, "Credit Facilities for Agriculture Greatly Improved by New Laws," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 159-163.)

1933, May 12. The Federal Emergency Relief Act, creating the Federal Emergency Relief Administration, was approved. (Searle F. Charles. Minister of Relief: Harry Hopkins and the Depression. Syracuse, N.Y.: Syracuse University Press, 1963. 286 pp., index.)

1933, May 12. The Agricultural Adjustment Act was approved. (Van L. Perkins. Crisis in Agriculture. Univ. of Calif. Pub. in History. Vol. 81. Berkeley, Calif.: University of California Press, 1962. 245 pp., notes, biblio., index.)

1933, May 18. The Tennessee Valley Authority Act was approved. (J. H. Kyle. Building of TVA: An Illustrated History. Baton Rouge, La.: Louisiana State University Press, 1958. 162 pp., index.)

1933, May 27. The Farm Credit Administration was established as an independent agency. It became part of the U.S. Department of Agriculture on July 1, 1939. It again became an independent agency on December 4, 1953. (Alvin S. Tostlebe. Capital in Agriculture: Its Formation and Financing Since 1870. Princeton, N.J.: Princeton University Press, 1957. 232 pp., index.)

1933, June 10. The Export Apple and Pear Act required that these commodities be inspected for export in compliance with export grade specifications. (Wells A. Sherman, "Apple and Pear Export Act Promises Important Benefits to Producers," Yearbook of Agriculture, U.S. Dept. Agr., 1934, pp. 140-142.)

1933, June 16. The Farm Credit Act, providing for the reorganization of agricultural credit activities, was passed. (Arthur M. Schlesinger, Jr. The Coming of the New Deal. Boston, Mass.: Houghton Mifflin Co., 1959. 669 pp., index.)

1933, June 16. The National Industrial Recovery Act was approved. (Leslie H. Fishel, Jr., "The Problem of Social Control." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. Pp. 499-515.)

1933, August 17. California's first marketing agreement affecting canning peaches, a nonbasic crop, became effective. (U.S. Department of Agriculture. Agricultural Adjustment Administration. Agricultural Adjustment... May 1933 to February 1934. Washington, D.C.: GPO, 1934. 393 pp.)

1933, September 19. The Soil Erosion Service, which later became the Soil Conservation Service, was created in the U.S. Department of the Interior. (D. Harper Simms. The Soil Conservation Service. New York: Praeger Publishers, 1970. 239 pp., index.)

1933, October 4. The Federal Surplus Relief Corporation was established to carry on diversion of agricultural commodities for relief purposes. (Joseph Stancliffe Davis. Wheat and the AAA. Washington, D.C.: The Brookings Institution, 1935. 468 pp., index.)

1933, October 4. The Farm Credit Administration requested the Governor of each State to establish a committee to attempt the conciliation of excessive and distressed farm debts. (H. C. M. Case, "Farm Debt Adjustment During the Early 1930's," Agricultural History 34:173-181. Oct. 1960.)

1933, October 10. The first soil-erosion control project of the Soil Erosion Service was established in Coon Valley, Wisconsin. (Robert L. Geiger, Jr. and George A. Keller, comp. Organization and Development of the Soil Conservation Service: A Reference for Employees. U.S. Dept. Agr., Soil Conservation Service. Washington, D.C.: GPO, 1970. 30 pp.)

1933, October 17. The Commodity Credit Corporation was established. (Robert L. Tontz, "Legal Parity: Implementation of the Policy of Equality for Agriculture, 1929-1954," Agricultural History 29:174-181. Oct. 1955.)

1934-36. Drought conditions in the Great Plains area of the United States became so severe that it was necessary for the Federal Government to take emergency steps to rescue dying cattle, relieve destitute families, and safeguard human life. (Great Plains Committee Report. The Future of the Great Plains. Washington, D.C.: GPO, 1936. 194 pp., apps.)

1934. The Weather Bureau began issuing special weather forecasts on pest control from its Pomona station for the benefit of orchard and citrus growers in five southern California counties. (Floyd D. Young, "Weather Forecasts for Pest Control Aid Citrus Growers of California," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 332-334.)

1934. The U.S. Department of Agriculture and the Iowa Agricultural Experiment Station imported Danish Landrace Hogs to use in breeding bacon-type hogs. (E. J. Warwick, "New Breeds and Types," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 276-280.)

1934. Grasshopper infestation was controlled by a cooperative Federal-State program. (J. R. Parka, "Grasshopper Control Accomplished Under Cooperative Program," Yearbook of Agriculture, U.S. Dept. Agr., 1935, pp. 227-229.)

1934. Thatcher, a hard red spring wheat resistant to stem rust, was developed by the Minnesota Agricultural Experiment Station and the U.S. Department of Agriculture. (B. B. Bayles, "New Varieties of Wheat," Yearbook of Agriculture, U.S. Dept. Agr., 1943-47, pp. 379-384.)

1934, January 31. The Federal Farm Mortgage Act was approved. (Gladys L. Baker, "Farm Problems and Programs." In: Farm Index. U.S. Dept. Agr., Washington, D.C.: GPO, 1975, pp. 3-8.)

1934, February 23. The Crop Production Loan Act was passed to provide loans to farmers for crop production and harvesting (48 Stat. 354.)

1934, March 31. Grain standards were revised, and new ones were made effective under the Grain Standards Act of 1916 for 1934 grain crops. (Edward C. Parker, "Grain Standards, Revised and New, Promulgated for the 1934 Marketing," Yearbook of Agriculture, U.S. Dept. Agr., 1935:223-227.)

1934, April 1. The rural rehabilitation program was initiated by the Federal Emergency Relief Administration. (W. W. Alexander, "Overcrowded Farms," Yearbook of Agriculture, U.S. Dept. Agr., 1940:870-886.)

1934, April 7. The Jones-Connally Act was approved. (D. A. FitzGerald. Livestock Under the AAA. Washington, D.C.: The Brookings Institution, 1935. 384 pp., app., index.)

1934, April 21. The Bankhead Cotton Control Act was approved. (Henry I. Richards. Cotton and the AAA. Washington, D.C.: The Brookings Institution, 1936. 389 pp., index.)

1934, May 9. The Jones-Costigan Sugar Act became law. (U.S. Department of Agriculture. Production and Marketing Administration. The United States Sugar Program. U.S. Dept. Agr., Agr. Inf. Bull. No. 111. Washington, D.C.: GPO, 1953. 34 pp.)

1934, May 11. Great dust storms originated in the "Dust Bowl" area of the Great Plains region. The drought was the worst ever recorded in the United States; it extended over 75 percent of the country and severely affected 27 States. (Lawrence Svobida. An Empire of Dust. Caldwell, Idaho: Caxton Printers, 1940. 203 pp., illus.)

1934, June 12. The Reciprocal Trade Agreements Act was approved. (L. A. Wheeler, "Reciprocal Trade Agreements--A New Method of Tariff Making," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 585-595.)

1934, June 19. The Emergency Appropriation Act approved by the President provided \$525 million for drought relief purposes throughout the United States (48 Stat. 1021.)

1934, June 28. The Frazier-Lemke Farm Bankruptcy Act was approved. (Ernest Feder, "Farm Debt Adjustment During the Depression--The Other Side of the Coin," Agricultural History 35:78-81. Apr. 1961.)

1934, June 28. The Taylor Grazing Act gave the U.S. Department of the Interior power to regulate grazing on public domain in the West. (Marion Clawson. The Bureau of Land Management. New York: Praeger Publishers, 1971. 209 pp., index.)

1934, June 28. The Kerr-Smith Tobacco Control Act was approved. (Harold B. Rowe. Tobacco Under the AAA. Washington, D.C.: The Brookings Institution, 1935. 317 pp., app., index.)

1934, June 30. The National Resources Board and Advisory Committee was established to prepare and present to the President a program for development and use of land, water, and other national resources. It was abolished on June 7, 1935, and its duties were transferred to the National Resources Committee which was established effective June 15, 1935. (John M. Gaus and Leon O. Wolcott. Public Administration and the United States Department of Agriculture. Chicago, Ill.: Public Administration Service, 1940. 534 pp., index.)

1935. Tenants operated 42 percent of the farms in the United States as compared with the 1880 figure of 25 percent. (John D. Black and R. H. Allen, "The Growth of Farm Tenancy in the United States," Quarterly Journal of Economics 51:393-425, May 1937.)

1935. The National Tillage Machinery Laboratory was established at Auburn, Alabama, to study factors applicable to the design of tillage implements and tractive devices, such as tire and crawler tract. (M. L. Nichols and A. W. Cooper, "Plowman's Progress," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 132-136.)

1935. The U.S. Department of Agriculture initiated the National Poultry Improvement Plan to improve production and marketing qualities of chickens and turkeys through performance testing. (Edward C. Miller, "One Man Feeds 5,000 Cattle or 60,000 Broilers," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 57-61.)

1935. The Agricultural Adjustment Act of 1933 was amended to provide for marketing agreements and orders, rather than licenses, for milk. (John D. Black. The Dairy Industry and the AAA. Washington, D.C.: The Brookings Institution, 1935. 520 pp., apps., index.)

1935. A one-man combine was developed for harvesting grain. (H. F. Miller, Jr., "Swift, Untiring Harvest Help," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 164-183.)

1935. The Soil Erosion Service was transferred from the U.S. Department of the Interior to the U.S. Department of Agriculture with Hugh Hammond Bennett as its head. (Robert J. Morgan. Governing Soil Conservation: Thirty Years of the New Decentralization. Baltimore, Md.: Johns Hopkins Press, 1965. 339 pp., index.)

1935. Federal assistance for school lunch programs was provided by the Federal Emergency Relief Administration. Loans had been made by the Reconstruction Finance Corporation to several towns for payment of labor required to prepare and serve school lunches during 1932 and 1933. (H. M. Southworth and M. I. Klaymen. The School Lunch Program and Agricultural Surplus Disposal. U.S. Dept. Agr., Misc. Pub. No. 467. Washington, D.C.: GPO, 1941. 66 pp., illus.)

1935. Sulfonamides (sulfa drug) was discovered and found to be important for controlling bacterial diseases in animals and humans. (L. Meyer Jones, "The Sulfa Drugs," Yearbook of Agriculture, U.S. Dept. Agr., 1956, pp. 96-98.)

1935. The estimated average equity of farm operators in the land they farmed was 39 percent.

1935, March 18. The De Rouen Rice Act was approved. (Edwin G. Nourse, and others. Three Years of the Agricultural Adjustment Administration. Washington, D.C.: The Brookings Institution, 1937. 600 pp., index.)

1935, March 19. The Prairie States Forestry Project began when the first tree was planted near Mangum, Oklahoma, as part of the shelterbelt program. (Jerome Dahl, "Progress and Development of the Prairie States Forestry Project," Journal of Forestry 38:301-306. Apr. 1940.)

1935, April 11. The Farmers' Independence Council of America was formally organized. (James C. Carey, "The Farmers' Independence Council of America, 1935-1938," Agricultural History 35:70-77. Apr. 1961.)

1935, April 14. The powder-dry soil of the Plains created the most awesome "black blizzard" experienced by the people of the Dust Bowl in the 1930's. (R. Douglas Hurt, "Dust Bowl--Drought, Erosion, and Despair on the Southern Great Plains," The American West 14:22-27. July-Aug. 1977.)

1935, April 27. The Congress declared soil erosion a national menace in an act directing the U.S. Department of Agriculture to establish a Soil Conservation Service. (George S. Wehrwein, "The Remedies: Policies for Private Lands," Yearbook of Agriculture, U.S. Dept. Agr., 1938, pp. 241-264.)

1935, April 30. The Resettlement Administration was established and became a part of the U.S. Department of Agriculture on January 1, 1937. In 1937, it was redesignated the Farm Security Administration. Its present name, Farmers Home Administration, was adopted in 1946. (James A. Munger, "Borrowing Money to Purchase Land," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 218-229.)

1935, May 6. The first Matanuska colonists from Minnesota arrived in Alaska to take up agricultural homesteads. (H. A. Johnson and K. L. Stanton. Matanuska Valley Memoir. Alaska Agricultural Experiment Station Bull. No. 18. July 1955.)

1935, May 11. The Rural Electrification Administration was established by Executive Order 7037 and was incorporated into the U.S. Department of Agriculture on June 1, 1939. (John H. Rixse, Jr., "Electricity Comes to Farms," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 69-75.)

1935, May 27. The Frazier-Lemke Farm Bankruptcy Act was invalidated by the Supreme Court. (Edwin P. Hoyt. The Tempering Years. New York: Charles Scribner's Sons, 1963. 373 pp., index.)

1935, June 15. The National Resources Committee was established to investigate America's natural resources and plan for their development and use. (Guy-Harold Smith, ed. Conservation of Natural Resources. 2d ed. New York: John Wiley & Sons, Inc., 1958. 474 pp., illus., biblio., index.)

1935, June 29. The Bankhead-Jones Act, providing for the expansion of agricultural research, was approved. (Gladys L. Baker and William G. Murray, "The Great Depression: Farm Ills Hit The Cities," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 47-54.)

1935, August 23. The Tobacco Inspection Act authorized official standards and marketing services for tobacco. (Charles E. Gage, "Historical Factors Affecting American Tobacco Types and Uses and the Evolution of the Auction Market," Agricultural History 2:43-57. Jan. 1937.)

1935, August 24. Amendments to the Agricultural Adjustment Act included both a provision (Section 32) appropriating an amount equal to 30 percent of customs receipts to encourage domestic consumption and exportation of agricultural commodities and a provision authorizing the use of marketing orders. (Edwin G. Nourse and others. Three Years of the Agricultural Adjustment Administration. Washington, D.C.: The Brookings Institution, 1937. 600 pp., app.s., index.)

1936. Droughts occurred in many localities. (John C. Hoyt. Drought of 1936. U.S. Dept. Interior, Water-Supply Paper No. 820. Washington, D.C.: GPO. 1938. 62 pp.)

1936, January 6. The Agricultural Adjustment Act was invalidated by the Hoosac Mills decision of the U.S. Supreme Court. (Paul L. Murphy, "The New Deal Agricultural Program and the Constitution," Agricultural History 29:160-169. Oct. 1955.)

1936, February 29. The Congress passed the Soil Conservation and Domestic Allotment Act as a substitute measure for the Agricultural Adjustment Act. (F. F. Elliott, "Agricultural Conservation--An Aspect of Land Utilization," Journal of Farm Economics 19:3-27. Feb. 1937.)

1936, May 20. The Rural Electrification Act was approved. Activities authorized by the act previously had been conducted under the Emergency Relief Appropriation Act of 1935. (Clyde T. Ellis. A Giant Step. New York: Random House, 1966. 267 pp., index.)

1936, June. Pacific Northwest Fruits, Inc., was formed, bringing together all cooperatives into one grower-owned and -controlled organization with specific aims. (Joseph W. Ellison, "Marketing Problems of Northwestern Apples, 1929-1940," Agricultural History 16:103-115. Jan. 1942.)

1936, June 15. The Commodity Exchange Act (formerly the Grain Futures Act) was approved. (J. M. Mehl, "Objectives of Federal Regulation of the Commodity Exchanges," Journal of Farm Economics 19:313-333. Feb. 1937.)

1936, June 22. The Omnibus Flood Control Act provided for surveys and improvements of watersheds for flood control. (Beatrice Hort Holmes. A History of Federal Water Resources Programs, 1800-1960. U.S. Dept. Agr., Misc. Pub. No. 1233. Washington, D.C.: U.S. Dept. Agr., Econ. Res. Serv., June 1952. 51 pp.)

1936, July 22. President Roosevelt appointed an interdepartmental Great Plains Drought Area Committee; it was later succeeded by the Great Plains Committee. (Report of the Great Plains Committee. The Future of the Great Plains. Washington, D.C.: GPO, Dec. 1936. 194 pp.)

1936, September 17. President Roosevelt approved the Great Plains Committee to draw up a "long term program for the efficient utilization of the resources of the Great Plains." (Elmer A. Starch, "A Better Life on the Plains," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 197-204.)

1936, November 16. President Roosevelt established a Special Committee on Farm Tenancy. (Donald Holley. Uncle Sam's Farmer: The New Deal Communities in the Lower Mississippi Valley. Urbana, Ill.: University of Illinois Press, 1975. 312 pp., biblio., essays, index.)

1937. The United States faced a business recession.

1937, April 13. The Smith-Doxey Amendment to the Cotton Statistics and Estimates Act of March 3, 1927, authorized free cotton classing and market news services for farmers organized to promote cotton improvement.

1937, May 18. The Norris-Doxey Cooperative Farm Forestry Act was approved providing for increased technical aid to farmowners for the sound management of their woodlands. (W. N. Sparhawk, "The History of Forestry in America," Yearbook of Agriculture, U.S. Dept. Agr., 1949, pp. 702-714.)

1937, June 3. The Agricultural Marketing Agreement Act was approved authorizing marketing agreements and orders and regulating imports of certain commodities under these orders. (Donald M. Rubel and Budd A. Holt, "Marketing Agreements," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 357-363.)

1937, June 28. The Federal Surplus Commodities Corporation was placed in the U.S. Department of Agriculture and was authorized to purchase and donate surplus commodities.

1937, July. The Office of Land Use Coordination was set up in Washington. (Milton S. Eisenhower and Roy I. Kimmel, "Old and New in Agricultural Organization," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 1125-1137.)

1937, July 22. The Bankhead-Jones Farm Tenant Act, based on the recommendations of the Resident's Committee on Farm Tenancy, established an experimental tenant purchase program. (Paul K. Conkin. Tomorrow A New World: The New Deal Community Program. Ithaca, N.Y.: Cornell University Press, 1959. 350 pp., illus., index.)

1937, August 4. The first soil conservation district in the United States was organized. (Robert J. Morgan. Governing Soil Conservation: Thirty Years of the New Decentralization. Baltimore, Md.: The Johns Hopkins Press, 1965. 399 pp., index.)

1937, August 28. The Water Facilities Act was approved. (U.S. Department of Agriculture. Soil Conservation Service. Report of the Chief of the Soil Conservation Service. Washington, D.C.: GPO, 1940. 64 pp.)

1937, September 1. The Sugar Act, replacing the Jones-Costigan Sugar Act, was approved. (U.S. Congress. House Committee on Agriculture. The United States Sugar Program. 87th Cong., 2d Sess. Committee Print. Washington, D.C.: GPO, 1971. 72 pp.)

1937, September 1. The Resettlement Administration was renamed the Farm Security Administration. The Secretary of Agriculture directed that functions relating to the land utilization program be transferred to the Bureau of Agricultural Economics. (Sidney Baldwin. Poverty and Politics: The Rise and Decline of the Farm Security Administration. Chapel Hill, N.C.: University of North Carolina Press, 1968. 438 pp., index.)

1938, February 16. The Federal Crop Insurance Corporation was created as an agency within the U.S. Department of Agriculture by Title V of the Agricultural Adjustment Act of 1938. (William H. Rowe. Federal Crop Insurance, A Description. U.S. Dept. Agr., Fed. Crop Ins. Corp., PA-408. 4th rev. Washington, D.C.: GPO, 1959. 42 pp.)

1938, February 16. The Agricultural Adjustment Act of 1938 provided for farm price support and adjustment programs based upon an "ever-normal granary" concept. It replaced and invalidated the Agricultural Adjustment Act of 1933. (Philip M. Glick. "The Soil and the Law," Journal of Farm Economics 20:430-447. May 1938. Continuation of article, 20:616-640. Aug. 1938.)

1938, May 25. The first dairy cattle artificial-breeding cooperative was organized by a group of dairymen in New Jersey. (Harvey E. Shaffer, "Artificial Insemination," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 297-303.)

1938, June 25. The Food, Drug, and Cosmetic Act was approved. (C. W. Crawford, "The Long Fight for Pure Food," Yearbook of Agriculture, U.S. Dept. Agr., 1954, pp. 211-220.)

1938, July 8. The Mount Weather agreement was approved as a starting point for working out individual cooperative land use planning agreements between the land-grant colleges and the U.S. Department of Agriculture. (Ellery A. Foster and Harold A. Vogel, "Cooperative Land Use Planning--A New Development in Democracy," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 1138-1156.)

1938, December 1. The Foreign Agriculture Service of the U.S. Department of Agriculture was established. (Alan L. Clem. The U.S. Agricultural Attache: His History and His Work. U.S. Dept. Agr., For. Agr. Serv., M-91. Washington, D.C. 1960. 14 pp.)

1939. The first U.S. grade standards were issued by the U.S. Department of Agriculture for a frozen product--frozen peas.

1939. The U.S. Department of Agriculture announced a major expansion of the school lunch program to better meet the needs of poor school children.

1939. Artificial insemination was widely used by animal breeders, although it had been first discovered by the Italian scientist Lazaro Spallanzani in 1790. (Ralph W. Phillips, "Artificial Breeding," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 113-121.)

1939. Paul Muller of the Swiss firm J. R. Geigy, A. G., discovered the insecticidal properties of DDT. A U.S. patent was granted to Muller in 1943. (Aaron J. Ihde, "Pest and Disease Controls." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. Pp. 369-385.)

1939, March 11. A dust storm centering in Oklahoma and Texas was one of the worst in history. (Alfred B. Sears, "The Desert Threat in the Southern Great Plains," Agricultural History 15:1-11. Jan. 1941.)

1939, March 13. The Food Stamp Program was formally announced as an experimental program by Secretary of Agriculture Henry Wallace and the chairman of the National Food and Grocery Conference Committee. (Joseph D. Cappock, "The Food Stamp Plan, Moving Surplus Commodities with Special Purpose Money," Transactions of the American Philosophical Society 37:131-199. May 1947.)

1939, May 3. The Congress authorized a program to lend agricultural experts and scientists to other American Republics (53 Stat. 652.)

1939, May 16. The first Food Stamp Plan was inaugurated in Rochester, New York. (Milo Perkins, "Thirty Million Customers for the Surplus," Yearbook of Agriculture, U.S. Dept. Agr., 1940, pp. 650-655.)

1939, June 23. The United States and Great Britain agreed to exchange 600,000 bales of American cotton for 90,500 tons of British rubber. (U.S. Congress. Senate Hearings on Administration of Certain Lending Agencies of the Federal Government. 79th Cong., 1st Sess., S. Doc. No. 375. Washington, D.C.: GPO, 1945. Pp. 92-93.)

1939, July 7. The first Agricultural Marketing Service was established in the U.S. Department of Agriculture. (U.S. Department of Agriculture. Agricultural Marketing Service. Agricultural Marketing Service: Organization and Functions. Washington, D.C., Mar. 1940. 97 pp.)

1939, August 9. The Federal Seed Act required truthful labeling of agricultural and vegetable seeds in interstate commerce and prohibited importation of low-quality seed and screenings. (Martin G. Weiss and Elbert L. Little, Jr., "Variety Is A Key Word," Yearbook of Agriculture, U.S. Dept. Agr., 1961, pp. 359-364.)

1939, September 1. World War II began in Europe.

1940. The U.S. census indicated that 58 percent of all farms had automobiles; 25 percent had telephones; and 33 percent had electricity.

1940. Total U.S. population reached 131,820,000; farm population, 30,840,000; 18 percent of persons gainfully employed were engaged in agriculture.

1940. Vitamin B₁₂ was discovered. It was used as a supplement for protein in animals and humans. (T. C. Byerly, "Systems Come, Traditions Go," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 31-39.)

1940. The first commercial "controlled atmosphere" storage for apples was constructed by a New York apple grower. It extended the marketing season for fresh apples throughout late winter, spring, and early summer months. (M. B. Hoffman, "Making A Better Apple, or Puzzles and Pomology," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 47-52.)

1940, February. The Allied Purchasing Commission arrived in Washington. (Eric Roll. The Combined Food Board: A Study in Wartime International Planning. Stanford University: Food Research Institute, 1956. 385 pp., index.)

1940, May. A Cotton Stamp Plan was inaugurated in Memphis, Tennessee, but remained only regional. (Dixon Wecter. The Age of the Great Depression 1929-1941. New York, N.Y.: The Macmillan Co., 1948. 434 pp., index.)

1940, May 28. A school penny-milk program under Section 32 of amendments to the Agricultural Adjustment Act was approved by the Secretary of Agriculture. (Russell E. Moffett and others. The School Milk Program: Experience, Effects, and Possible Changes. A Northeast Regional Research Publication. Storrs Agricultural Experiment Station. Storrs, Conn.: The University of Connecticut, Nov. 1961. 34 pp.)

1940, May 28. The National Defense Advisory Commission was established by President Roosevelt. (Imogene H. Putnam. Volunteers in OPA. Office of Temporary Controls, Office of Price Administration. Washington, D.C., 1947. 166 pp.)

1940, June 26. Executive Order 8455 gave the U.S. Department of Agriculture general authorization for postwar planning. (Division of the Federal Register. The National Archives. Code of Federal Regulations of the United States of America. Cumulative Supplement Titles 1-3. Washington, D.C.: GPO, 1943. Pp. 676-678.)

1940, June 30. The Surplus Marketing Administration was established. (Gladys L. Baker, "'And To Act For The Secretary': Paul H. Appleby And The Department of Agriculture, 1933-1940," Agricultural History 45: 235-258. Oct. 1971.)

1940, September 5. Claude R. Wickard (February 28, 1893-April 30, 1967) of Indiana served as Secretary of Agriculture from September 5, 1940, to June 29, 1945. (Dean Albertson. Roosevelt's Farmer; Claude R. Wickard and the New Deal. New York: Columbia University Press, 1961. 424 pp., illus., index.)

1941. Following a 3-year study, chiefly of private forests, the Joint Congressional Committee on Forestry, under the chairmanship of Senator John H. Bankhead of Alabama, issued a report on "Forest Lands of the United States." The report recommended various cooperative aids to private forest-land owners, expansion of public ownership, and a Federal-State system of regulation of forestry practices. (U.S. Congress. Senate. Joint Committee on Forestry. Forest Lands of the United States. Committee Report. 77th Cong., 1st sess., S. Doc. 32. Washington, D.C.: GPO, 1941. 44 pp., tables, maps.)

1941. The U.S. Department of Agriculture established Utilization Research and Development Divisions in Pennsylvania, Illinois, Louisiana, and California. One of their major assignments was to develop new industrial outlets for agricultural products and crop residues. (G. F. Sprague, "Breeding for Food, Feed, and Industrial Uses," Yearbook of Agriculture, U.S. Dept. Agr., 1961, pp. 119-127.)

1941, March 11. The Lend Lease Act was approved. The Office of Lend Lease Administration was set up on October 28, 1941 (Samuel I. Rosenman, comp. The Public Papers and Addresses of Franklin D. Roosevelt: 1941. "The Call To Battle Stations." New York: Harper & Brothers, 1950. 632 pp., index.)

1941, April. The Land Law of Puerto Rico, designed to promote a broader distribution of land and of the proceeds of its cultivation among those who tilled it, was approved. (J. A. Morales, "Puerto Rico: Change and Progress," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 449-458.)

1941, April 11. The Office of Price Administration and Civilian Supply was created by Executive order. (Harvey C. Mansfield and Associates. A Short History of OPA. U.S. Office of Price Administration General Publication 15. Washington, D.C.: GPO, 1948. 332 pp.)

1941, May 7. Secretary of Agriculture Wickard announced the formal organization of the Joint Anglo-American Food Committee. (S. McKee Rosen. The Combined Boards of the Second World War; An Experiment in International Administration. New York: Columbia University Press, 1951. 288 pp., index.)

1941, May 26. The Congress raised price supports for major agricultural commodities to 85 percent of parity through loans on the crops. (U.S. Department of Agriculture. Commodity Credit Corporation. Summary of 30 Years' Operations of the Commodity Credit Corporation With Report of the President of Commodity Credit Corporation, 1964. Washington, D.C.: GPO, May 1965. 80 pp.)

1941, May 26-28. The National Nutrition Conference, sponsored by the National Research Council, met. (U.S. Federal Security Agency. Proceedings of the National Nutrition Conference for Defense. Washington, D.C.: GPO, 1942. 254 pp.)

1941, July 1. The Steagall Amendment provided for price supports for expansion of production of nonbasic agricultural commodities. (Murray Thompson, "The Search for Parity," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 543-556.)

1941, October 28. The Office of Lend-Lease Administration was established. (Edward R. Stettinius, Jr. Lend-Lease, Weapon for Victory. New York: The Macmillan Co., 1944. 358 pp., illus., maps, index.)

1941, December 7. Japan attacked Pearl Harbor. (Ralph Sanders, "Three Dimensional Warfare: World War II." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. Pp. 561-578.)

1941, December 18. The first War Powers Act was approved. (Bureau of the Budget. The United States at War: Development and Administration of the War Program by the Federal Government. Prepared under the auspices of the Committee of Records of War Administration by the War Records Section. Washington, D.C.: GPO, 1946. 555 pp.)

1942. P. W. Zimmerman and A. E. Hitchcock discovered the growth regulation property of 2,4-D, later widely used as a weed killer. (Gale E. Peterson, "The Discovery and Development of 2,4-D," Agricultural History 41:243-253. July 1967.)

1942. An effective huller was developed by the U.S. Department of Agriculture for the harvesting of castor beans. (I. F. Reed, "Equipment of Oil Crops," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 847-850.)

1942, January 16. The War Production Board was established by Executive Order. (U.S. Civilian Production Administration. Bureau of Demobilization. Industrial Mobilization for War; History of the War Production Board and Predecessor Agencies 1940-1945. Vol. I. Program and Administration. Washington, D.C.: U.S. Civilian Production Administration, 1947. 1110 pp.)

1942, January 30. The Emergency Price Control Act was passed and signed by the President. (Laurence E. Tilley. Chronology of the Office of Price Administration, January 1941-November 1946. Historical Reports on War Administration. Misc. Pub. No. 1. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1946. 72 pp., index.)

1942, February 23. U.S. Department of Agriculture's Agricultural Marketing Service and the Surplus Marketing Administration were merged under the Agricultural Marketing Administration.

1942, March 5. The Emergency Rubber Production Act was approved. (Loren G. Polhamus. Rubber: Botany Cultivation and Utilization. World Crop Series. New York: Interscience Publishers, Inc., 1962. 448 pp., biblio., index.)

1942, April-May. The Cotton Stamp Plan operations were suspended. (L. D. Howell, "Cotton Surplus Disposal Programs," Journal of Farm Economics 26:273-291. May 1944.)

1942, April 13. The sugar quota system was suspended. The wartime suspension of the sugar quota system was terminated on November 28, 1947. (Roy A. Ballinger. A History of Sugar Marketing. U.S. Dept. Agr., Econ. Res. Serv., AER No. 197. Washington, D.C.: GPO, Feb. 1971. 126 pp.)

1942, April 20. Sugar rationing began. (U.S. Bureau of the Budget. The United States at War: Development and Administration of the War Program by the Federal Government. Washington, D.C.: GPO, 1946. 555 pp., index.)

1942, June 5. The Foods Requirements Committee was established as an interagency committee chaired by the Secretary of Agriculture and reporting to the Chairman of the War Production Board.

1942, June 9. The establishment of the Combined Food Board was announced by U.S. President Roosevelt and British Prime Minister Churchill. (Eric Roll. The Combined Food Board: A Study in Wartime International Planning. Stanford, Calif.: Stanford University Press, 1956. 385 pp.)

1942, June 30. The Civilian Conservation Corps ended when no congressional appropriation was made. (U.S. Department of Agriculture. Soil Conservation Service. The CCC at Work, A Story of 2,500,000 Young Men. Washington, D.C.: GPO, 1942. 103 pp.)

1942, August. The Emergency Farm Labor Transportation Program, with the Secretary of Agriculture delegating the responsibility for its establishment and operation to the Farm Security Administration, was established. (Samuel Liss, "The Concept and Determination of Prevailing Wages in Agriculture During World War II," Agricultural History 24:4-18. Jan. 1950.)

1942, August 4. The Migrant Labor Agreement with Mexico became effective. (Otey M. Scruggs, "Evolution of the Mexican Farm Labor Agreement of 1942," Agricultural History 34:140-149. July 1960.)

1942, September 15. By the fall of 1942, it became necessary to institute rationing of farm machinery which was delegated to the U.S. Department of Agriculture by the Office of Price Administration. The program was ended on November 21, 1944. (Erling Hole. Farm Machinery and Equipment. U.S. Dept. Agr., War Records Monograph No. 1. Washington, D.C.: Bureau of Agricultural Economics, Apr. 1946. 22 pp.)

1942, October 3. The Office of Economic Stabilization was established by Executive Order 9250. (Division of the Federal Register. The National Archives. Code of Federal Regulations of the United States of America. Cumulative Supplement Titles 1-3. Washington, D.C.: GPO, 1943. Pp. 1213-1216.)

1942, November 13. The U.S. Congress passed the Tydings Amendment to the Selective Training and Service Act which was a "remain working in agriculture or fight" clause. The amendment was intended to stop farmers from leaving for higher paying jobs elsewhere. (Albert A. Blum, "The Farmer, The Army and The Draft," Agricultural History 38:34-42. Jan. 1964.)

1942, November 30. The Secretary of Agriculture was assigned authority for the stabilization of farm wages. (Samuel Liss, "Farm Wage Boards Under the Wage Stabilization Program During World War II," Agricultural History 30:128-137. July 1956.)

1942, December 5. Agricultural marketing programs were consolidated under the Food Distribution Administration of the U.S. Department of Agriculture.

1942, December 5. The War Food Administration powers were transferred to the U.S. Department of Agriculture by Executive Order 9280. The agricultural press hailed the establishment of a "Food Administration" within the Department of Agriculture, although this name was not officially used until 4 months later under Executive Order 9334. (U.S. Bureau of the Budget. The United States At War: Development and Administration of the War Program by the Federal Government. Washington, D.C.: GPO, 1946. 555 pp. app., index.)

1943. Production of penicillin, discovered in 1928 in London by Arthur Fleming, increased markedly through use of a lactose-corn steep liquor medium, developed by the Northern Regional Research Laboratory in Peoria, Illinois. (K. B. Raper, "Penicillin," Yearbook of Agriculture, U.S. Dept. Agr., 1943-47, pp. 699-710.)

1943, January 23. The responsibility for recruiting, placing, transferring, and utilizing agricultural workers was transferred from the U.S. Employment Service to the U.S. Department of Agriculture.

1943, March 1. Food Stamp Plan operations were suspended.

1943, March 1. Rationing of fruits and vegetables under the point system began as the first major food rationing program. (Judith Russell and Renee Fantin. Studies in Food Rationing. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1947. 404 pp.)

1943, March 26. The Food Production and Distribution Administration, later known as the War Food Administration, was established within the U.S. Department of Agriculture by Executive order. (Benjamin Baker. Wartime Food Procurement and Production. New York: Kings Crown Press, Columbia University, 1951. 219 pp., index.)

1943, April 8. President Roosevelt issued the "Hold-the-Line" order on prices. (Seymour E. Harris and Philip Ritz. Problems in Price Control: Stabilization Subsidies. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1947. 242 pp., app.)

1943, April 19. Marketing and distribution programs were placed under the War Food Administration. (Report of the Director of the Food Distribution Administration. War Food Administration, U.S. Dept. of Agr. Washington, D.C.: GPO, 1943. 123 pp.)

1943, April 29. The Congress appropriated funds to the U.S. Department of Agriculture for an emergency farm labor program. This program ended on December 31, 1947. (Wayne D. Rasmussen. A History of the Emergency Farm Labor Supply Program 1943-1947. Agr. Mono. No. 13. U.S. Dept. Agr. Washington, D.C.: Bureau of Agricultural Economics, Sept. 1951. 298 pp.)

1943, May 15. The War Meat Board was created to coordinate meat rationing and Government meat buying programs. (Grover J. Sims. Meat and Meat Animals in World War II. War Record Mono. No. 9. U.S. Dept. Agr. Washington, D.C.: Bureau of Agricultural Economics, Feb. 1951. 149 pp.)

1943, May 18-June 3. A conference held at Hot Springs, Virginia, led to the development of the United Nations Food and Agriculture Organization (FAO). (Alex D. Angelidis and Robert L. Tontz, "Friends and Partners," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 590-593.)

1943, May 27. The Office of War Mobilization was established. (William J. Wilson and others. The Beginnings of OPA. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1947. 246 pp., index.)

1943, November 9. The United Nations Relief and Rehabilitation Administration (UNRRA) was established by international agreement. (United Nations Relief and Rehabilitation Administration. UNRRA: The History of the United Nations Relief and Rehabilitation Administration. 3 vols. New York: Columbia University Press, 1950.)

1944. The Beltsville small white turkey was developed. (Ralph W. Phillips, "Breeding Better Livestock," Yearbook of Agriculture, U.S. Dept. Agr., 1943-47, pp. 33-60.)

1944. Marketable frozen orange juice concentrate became available.

1944, February 27. Blue and red ration tokens were used for processed foods and meat and fats. (Joseph A. Kershaw. A History of Ration Banking. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1947. 150 pp.)

1944, June 22. The Servicemen's Readjustment Act, making World War II veterans eligible for benefits of the Bankhead-Jones Farm Tenant Act, was approved. (Edward C. Banfield, "Ten Years of the Farm Tenant Purchase Program," Journal of Farm Economics 31:469-486. Aug. 1949.)

1944, September 21. The U.S. Department of Agriculture Organic Act was passed to provide for the control and eradication of certain animal and plant pests and diseases, to provide for a more efficient protection and management of the national forests, and to facilitate the carrying out of agricultural conservation and related agricultural programs (58 Stat. 732.)

1945. A tractor-operated machine was designed and built for collecting sweetpotato vines for feed. (O. A. Brown, "Machines for Sweetpotatoes," Yearbook of Agriculture, U.S. Dept. Agr., 1943-1947, pp. 824-826.)

1945. Greatly improved organic fungicides were developed. (W. B. Ennis, Jr. and W. D. McClellan, "Chemicals in Crop Production," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 106-112.)

1945. Rate of farm tenancy reached the lowest level since 1910, while farmers' equities almost doubled in value between 1940 and 1945. (W. W. Wilcox. The Farmer in the Second World War. Ames, Ia.: Iowa State College Press, 1947. 410 pp., index.)

1945, May 7. Germany surrendered to the Allies.

1945, June. The Bankhead-Flannagan Act, providing for expansion of county extension work, was approved. (M. L. Wilson and H. M. Dixon, "Farm and Home Planning--A New Approach to Farm Management Extension Work," Journal of Farm Economics 29:167-174. Feb. 1947.)

1945, June 20. The War Food Administration was terminated, and its functions were transferred back to the U.S. Department of Agriculture.

1945, June 30. Clinton P. Anderson (October 23, 1895-November 11, 1975) of New Mexico served as Secretary of Agriculture from June 30, 1945, to May 10, 1948. (Clinton P. Anderson. Outsider in the Senate: Senator Clinton Anderson's Memoirs. New York: World Publishing Co., 1970. 328 pp., illus., index.)

1945, August 14. Japan surrendered to the Allies.

1945, August 20. Marketing and distribution programs were placed in the U.S. Department of Agriculture's newly organized Production and Marketing Administration.

1945, August 25. President Truman terminated lend-lease. (Barton J. Bernstein and Allen J. Matusow. The Truman Administration: A Documentary History. New York: Harper & Row Pub., 1966. 518 pp., biblio., index.)

1945, October 16. The United Nations Food and Agriculture Organization (FAO) was formally organized. (Gove Hambidge. The Story of the FAO. New York: Van Nostrand, 1955. 303 pp.)

1945, November 24. Food rationing ended on all products except sugar. (Emmette S. Redford. Field Administration of Wartime Rationing. Office of Temporary Controls, Office of Price Administration. Washington, D.C.: GPO, 1947. 196 pp., index.)

1946. Sir John Boyd Orr of England proposed a World Food Board to handle problems of shortages and surpluses. (James P. Cavin, ed. Economics for Agriculture: Selected Writings of John D. Black. Cambridge, Mass.: Harvard University Press, 1959. 719 pp., index.)

1946, February 6. President Truman announced a program to meet critical and urgent world food needs. (Barton J. Bernstein, "The Postwar Famine and Price Control, 1946," Agricultural History 38:235-240. Oct. 1964.)

1946, February 20. The Employment Act of 1946 was approved. (Stephen K. Bailey. Congress Makes A Law, The Story Behind the Employment Act of 1946. New York: Random House, 1964. 282 pp.)

1946, June 4. The National School Lunch Act, which authorized assistance to States through grants-in-aid and other means in establishing nonprofit school lunch programs, was approved. (Marvin M. Sandstrom, "School Lunches," Yearbook of Agriculture, U.S. Dept. Agr., 1959, pp. 691-700.)

1946, June 20. The International Emergency Food Council was established as a successor to the Combined Food Board.

1946, August 14. The Research and Marketing Act was signed. (E. A. Meyer, "Developments Under the Research and Marketing Act of 1946--Finance, Administrative Organization, Procedure and Policy," Journal of Farm Economics 29:1378-1382. Nov. 1947.)

1946, August 14. The Farmers' Home Administration Act was passed and approved as Public Law 731. The act abolished the Farm Security Administration. (Oris V. Wells, "Agricultural Legislation: An Appraisal of Current Trends and Problems Ahead," Journal of Farm Economics 29:41-51. Feb. 1947.)

1946, August 14. The Agricultural Marketing Act was approved. It provided for integrated administration of marketing programs, scientific approach to marketing problems, and basic authority for major functions of the Agricultural Marketing Service in the U.S. Department of Agriculture, including marketing research, Federal standards grading and inspection services, market news services, market expansion, consumer education, matching fund program with States, and others. Authority to engage in transportation matters before regulatory agencies was broadened. (Edward C. Banfield, "Planning Under the Research and Marketing Act of 1946; A Study in the Sociology of Knowledge," Journal of Farm Economics 31:48-75. Feb. 1949.)

1946, September. The Cabinet Committee on World Food Problems was appointed.

1946, October 24. All food products except sugar, syrups, and rice were removed from price control. (Gladys L. Baker and Wayne D. Rasmussen. A Chronology of the War Food Administration, Including Predecessor and Successor Agencies, August 1939 to December 1946. U.S. Dept. Agr. Washington, D.C.: Bureau of Agricultural Economics, 1950. 73 pp.)

1946, December 31. Presidential proclamation of cessation of World War II hostilities resulted 2 years later in the expiration of price supports for major farm commodities at 90 percent of parity unless renewed by new legislation.

1947. General Agreement on Tariffs and Trade was negotiated. (D. Gale Johnson, "Interrelations in Our Policies for Agriculture, Trade, and Aid," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 244-246.)

1947, February 1. The Commodity Exchange Authority was established. The Authority was responsible for administering the Commodity Exchange Act of September 21, 1922. (Stanley W. Brown and Virgin E. Baugh, comp. Record Group No. 180: Records of the Commodity Exchange Authority. Preliminary Inventory No. 112. Washington, D.C.: The National Archives, 1959. 33 pp.)

1947, February 28. President Truman signed a bill to aid Mexico in suppressing the outbreak of foot-and-mouth disease. (William Dusenberry, "Foot and Mouth Disease in Mexico, 1946-1951," Agricultural History 29:82-90. Apr. 1955.)

1947, June 12. Sugar rationing to household consumers and institutional users was discontinued. (Wayne D. Rasmussen and Gladys L. Baker. A Chronology of the Department of Agriculture's Food Policies and Related Programs, January 1947 to December 1951. U.S. Dept. Agr. Washington, D.C.: Bureau of Agricultural Economics, 1952. 133 pp.)

1947, June 25. The Federal Insecticide, Fungicide, and Rodenticide Act which replaced the Federal Insecticide Act of 1910, provided coverage for additional types of pest-control materials. (W. G. Reed, "The Federal Act of 1947," Yearbook of Agriculture, U.S. Dept. Agr., 1952, pp. 310-314.)

1947, September 25. The Citizens Food Committee was appointed by President Truman to advise on food conservation. (Allen J. Matusow. Farm Policies and Politics in the Truman Years. Cambridge, Mass.: Harvard University Press, 1967. 267 pp., index.)

1947, October 30. The General Agreement on Tariffs and Trade was signed and became effective on January 1, 1948. (A. Richard DeFelice, "General Agreement on Tariffs and Trade," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 476-481.)

1947, December 17. The Foreign Aid Act of 1947 was approved to provide aid to certain foreign countries (61 Stat. 934.)

1948. The National Foundation Seed Project was organized by the U.S. Department of Agriculture. (Hugo O. Graumann and Mason A. Hein, "Crops for Our Grasslands," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 133-136.)

1948. A fibrometer was introduced to measure quality in asparagus by determining the resistance of asparagus stalks to cutting. (Harold T. Cook, "Measuring the Keeping Quality," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 307-316.)

1948. Grain aeration systems were adapted to the forced-distribution application of fumigants to large bulk-grain storages for more effective and economical control of stored-grain insects.

1948, April. The convention establishing the Organization for European Economic Cooperation was signed. (John E. Montel, "The European Economic Community," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 458-475.)

1948, April 4. The Foreign Assistance Act, creating the Economic Recovery Program, was approved. (Harry B. Price. The Marshall Plan and Its Meaning. Ithaca, N.Y.: Cornell University Press, 1955. 424 pp., index.)

1948, June 2. Charles F. Brannan (August 23, 1903-) of Colorado served as Secretary of Agriculture from June 2, 1948 to January 20, 1953. (Reo M. Christenson. The Brannan Plan: Farm Politics and Policy. Ann Arbor, Mich.: University of Michigan Press, 1959. 207 pp., index.)

1948, July 3. The Agricultural Act of 1948 was approved. (H. C. M. Case, "The Agricultural Act of 1948," Journal of Farm Economics 31:227-236. 1949.)

1948, December 31. The U.S. Department of Agriculture's obligation under the Steagall amendment to support specified nonbasic commodities at 90 percent of parity was terminated.

1949. The usefulness of antibiotics in promoting animal nutrition was demonstrated. (H. R. Bird, "Chicken in Every Pot--The Broiler Bonanza," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 37-41.)

1949. U.S. Department of Agriculture scientists suggested the "package approach to farming." This meant using all available technologies for increasing production. (Wayne D. Rasmussen, "Agriculture in the Future," Red River Valley Historical Review 3:9-22. Winter 1978.)

1949, June 13. The International Wheat Agreement was approved by the Senate. (Murray R. Benedict. Farm Policies of the United States, 1790-1950: A Study of Their Origins and Development. New York: The Twentieth Century Fund, 1953. 548 pp., index.)

1949, July 15. The House Act of 1949, authorizing loans for farm housing, was approved. (Paul E. Grayson, "Farm Housing in the United States and Recent Farm Housing Legislation," Journal of Farm Economics 32:590-603. Nov. 1950.)

1949, August 1. The first International Wheat Agreement, prompted by a serious decline in wheat prices, was ratified by 38 countries and became effective. (John C. Scholl, "Commodity Agreements," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 486-494.)

1949, October 28. The rural telephone program was authorized by an amendment to the Rural Electrification Act. (E. C. Weitzell, "Telephones for Farmers," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 86-88.)

1949, October 31. The Agricultural Act of 1949 incorporated the principle of flexible price support and provided a change in the parity formula. It also provided, through Section 416, for additional domestic disposition of surplus agricultural commodities for donations to needy persons abroad through U.S. voluntary relief organizations. (U.S. Department of Agriculture. Farm Commodity and Related Programs. U.S. Dept. Agr., Agr. Stabilization and Conservation Serv., Agr. Hndbk. No. 345. Washington, D.C.: GPO, 1967. 150 pp.)

1950. The Second American Agricultural Revolution, which began as a result of World War II, was transforming American agriculture through improved technology. (Wayne D. Rasmussen, "The Impact of Technological Change on American Agriculture, 1862-1962," Journal of Economic History 22:578-591. Dec. 1962.)

1950. The Congress formed a Select Committee to Investigate the Use of Chemicals in Foods, and in 1958, passed the food additive amendment. (George P. Larrick, "The Pure Food Law," Yearbook of Agriculture, U.S. Dept. Agr., 1959, pp. 444-451.)

1950. Of the 5.4 million farm operator families in the United States, 1.5 million had cash incomes of under \$1,000. (U.S. Department of Agriculture. Development of Agriculture's Human Resources; A Report on Problems of Low-Income Farmers. Prepared for the Secretary of Agriculture. Washington, D.C.: GPO, 1955. 44 pp., illus., maps.)

1950. Commercial feeding of Stilbestrol to beef cattle began.

1950. Total U.S. population reached 151,132,000; farm population 25,058,000; 11 percent of gainfully employed persons were engaged in agriculture.

1950, June 3. The President's Commission on Migratory Labor was established by Executive Order 10129. (Ellis W. Hawley, "The Politics of the Mexican Labor Issue, 1950-1965," Agricultural History 40:157-176. July 1966.)

1950, June 25. North Korean Communist forces invaded South Korea. (Edward L. and Frederick H. Schapsmeier. Prophet in Politics: Henry A. Wallace and the War Years, 1940-1965. Ames, Ia.: The Iowa State University Press, 1970. 268 pp., index.)

1950, August 25. The Cooperative Forest Management Act was approved. It authorized Federal cooperation with the States to provide on-the-ground technical services to private forest landowners and operators and to processors of primary forest products with respect to forest management and the harvesting, marketing, and processing of forest products. This superseded the Norris-Doxey Act of 1937. (William J. Stahl, "Help for the Forest Owner," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 243-245.)

1950, September 8. The Defense Production Act was approved, and on September 9, the Secretary of Agriculture was delegated responsibility for food, farm equipment, and commercial fertilizer. (Karl Brandt, "American Agricultural Policy During Rearmament," Journal of Farm Economics 34:184-201. May 1952.)

1950, September 13. The National Production Authority was established within the U.S. Department of Commerce.

1950, December 16. President Truman's declaration of the existence of a state of national emergency (the Korean War) resulted in increased emphasis on agricultural production.

1951. Organic chemicals known as chelates were found to be useful in protecting plants against deficiencies in certain metal nutrients.

1951, January 24. An Office of Price Stabilization was created within the Economic Stabilization Agency.

1951, September 8. A peace treaty with Japan was signed in San Francisco, California. (John D. Hicks and others. The American Nation; A History of the United States from 1865 to the Present. 4th ed. Boston, Mass.: Houghton Mifflin Co., 1963. 939 pp., index.)

1951, October 19. President Truman proclaimed the termination of a state of war between the United States and the Government of Germany.

1952. The first attempt was made to harvest grapes mechanically in California. (A. J. Winkler and L. H. Lamouria, "Machine Harvesting of Grapes," California Agriculture 10:9-14. 1956.)

1952. The U.S. Department of Agriculture studied the effect of chilling temperatures on tomatoes. This led to the use of moderate temperatures in transportation of tomatoes and resulted in better ripening and less decay.

1952, June 30. Public Law 429, of the 82d Congress, amended and extended the Defense Production Act of 1950 (66 Stat. 296.)

1953. The Council on Economic and Cultural Affairs was set up. It was reincorporated as the Agricultural Development Council, Inc., in November 1963. It was supported by the Rockefeller Brothers Fund and John D. Rockefeller, III. (A. H. Moseman and F. F. Hill, "Private Foundations and Organizations," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 523-534.)

1953. The U.S. Department of Agriculture demonstrated the use of light transmittance for detecting blood spots in eggs. This principle was later applied to detection of hollow heart and black spot in potatoes, water core in apples, and changes in ripening. (T. E. Hienton and J. P. Schaenzer, "Farmers Use Electricity," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 75-86.)

1953. Total area of irrigated land in the 17 Western States was about 27.5 million acres, or about 3.5 percent of the total farmland in those States. (E. L. Greenshields, "Water for Irrigation," Yearbook of Agriculture, U.S. Dept. Agr., 1955, pp. 247-251.)

1953, January 21. Ezra Taft Benson (August 4, 1899-) of Utah served as Secretary of Agriculture from January 21, 1953 to January 20, 1961. (Edward L. and Frederick H. Schapsmeier. Ezra Taft Benson and the Politics of Agriculture: The Eisenhower Years 1953-1961. Danville, Ill.: Interstate Printers and Publishers, 1975. 374 pp., index.)

1953, February 6. All price and distribution controls on livestock and meat were removed. (Wayne D. Rasmussen and Gladys L. Baker. A Chronology of the Department of Agriculture's Food Policies and Related Programs, January 1952 to December 1953. U.S. Dept. Agr. Washington, D.C.: Agricultural Marketing Service, 1954. 89 pp.)

1953, March 10. The Foreign Agricultural Service was established in the U.S. Department of Agriculture. It succeeded the Office of Foreign Agricultural Relations, established in July, 1939.

1953, March 27. Sales of all commodities and services were exempted from price control.

1953, July 20. The National Agricultural Advisory Commission was established on a permanent basis.

1953, July 27. The armistice ending the Korean War was signed.

1953, November 2. The Agricultural Research Service was established in the U.S. Department of Agriculture, replacing the Agricultural Research Administration. (Ernest G. Moore. The Agricultural Research Service. New York: Frederick A. Praeger, Publishers, 1967. 244 pp., index.)

1953, November 2. The Agricultural Marketing Service was established in the U.S. Department of Agriculture. (O. V. Wells, "Agricultural Economics Under the USDA Reorganization of November 2, 1953," Journal of Farm Economics 36:1-8. Feb. 1954.)

1953, December 4. The Cooperative Research and Service Division, formerly a part of Farm Credit Administration, became the Farmer Cooperative Service. Under provisions of the Farm Credit Act of 1953, the Division remained in the U.S. Department of Agriculture whereas the remainder of the Administration became an independent agency. (Andrew W. McKay and Martin A. Abrahamsen. Helping Farmers Build Cooperatives: The Evolution of Farmer Cooperative Service. U.S. Dept. Agr., Farmer Coop. Serv., Circ. No. 31. Washington, D.C.: GPO, 1962. 82 pp.)

1954. The National Wool Act supported prices to encourage domestic production. (Alex D. Angelidis, "Our Agricultural Imports," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 370-374).

1954. The first commercial monogerm sugar beet seed was released. (Roy Bainer, "Science and Technology in Western Agriculture," Agricultural History 49:56-72. Jan. 1975.)

1954. In Oklahoma, J. G. Porterfield and E. M. Smith designed a planter that produced wide furrows. (Elmer B. Hudspeth, Jr., and others, "Planting and Fertilizing," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 147-153.)

1954, July 10. The Agricultural Trade Development and Assistance Act of 1954 (Public Law 480) revised Section 416 of the Agricultural Act of 1949 to encourage export of price-supported commodities to nations unable to make purchases on the world market and to aid agricultural improvement in developing nations. (Peter A. Toma. The Politics of Food for Peace. Tucson, Ariz.: The University of Arizona Press, 1967. 195 pp., index.)

1954, August 4. The Watershed Protection and Flood Prevention Act was approved. (Hugh H. Wooten and Lewis A. Jones, "The History of Our Drainage Enterprises," Yearbook of Agriculture, U.S. Dept. Agr., 1955, pp. 478-490.)

1954, August 17. President Eisenhower signed the Water Facilities Act. (Karl O. Kohler, Jr., "Trends in the Utilization of Water," Yearbook of Agriculture, U.S. Dept. Agr., 1955, pp. 35-40.)

1954, August 28. The Special School Milk Program was established under the Agricultural Act of 1954 which provided authority for use of Commodity Credit Corporation funds to increase fluid milk use in schools. (Ezra Taft Benson. Cross Fire: The Eight Years with Eisenhower. Garden City, N.Y.: Doubleday & Co., Inc. 1962. 627 pp., apps., index.)

1954, August 28. The Agricultural Act of 1954 established flexible price supports, authorized commodity set-asides, and provided wool support payments. (Edward L. and Frederick H. Schapsmeier, "Eisenhower and Ezra Taft Benson: Farm Policy in the 1950's," Agricultural History 44:369-378. Oct. 1970.)

1954, September 1. The Social Security Act was amended to extend coverage to farm operators. (Gene Wunderlich, "Social Security in Agriculture: A Preliminary Appraisal of Its Operation, Implications, and Emerging Problems," Journal of Farm Economics 38: 17-29. Feb. 1956.)

1955. The National Farmers Organization was established. (George Brandsberg. The Two Sides in NFO's Battle. Ames, Ia.: Iowa State University Press, 1964. 301 pp., index.)

1955. The Rural Development Program was started in the U.S. Department of Agriculture. (Joseph C. Doherty, "A New Program for Better Living," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 376-384.)

1955. The Interdepartmental Committee on Nutrition for National Defense was established. (Esther F. Phipard and Riley H. Kirby, "Nutritional Status of the World," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 37-43.)

1955. The National Cowboy Hall of Fame was chartered to preserve the heritage of the West. It marked the fruition of a lengthy one-man crusade by Chester A. Reynolds of Kansas City. (A. M. Gibson, "The National Cowboy Hall of Fame," Agricultural History 33:103-106. July 1959.)

1955. U.S. Department of Agriculture scientists, using radio-active material as a tool, eradicated screwworm fly from the island of Curacao.

1956. George Angalet, a U.S. Department of Agriculture parasite explorer, discovered a small wasp which was used in controlling rhodesgrass scale. (Reece I. Sailer and Bernard A. App, "Wasp Livens Up Beef Production," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 108-110.)

1956. The Commodity Credit Corporation Export Credit Sales Program was established. (John H. Dean, "Using Our Abundance," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 594-596.)

1956. The Rural Electrification Administration made its first loan for a nuclear power generator. (U.S. Department of Agriculture. Rural Lines, U.S.A.: The Story of the Rural Electrification Administration's First Twenty-five Years, 1935-1960. U.S. Dept. Agr., Misc. Pub. No. 811. Washington, D.C.: GPO, 1960. 68 pp., illus. Revised edition issued December 1972.)

1956. The Forest Service and cooperating agencies in California made the first practical application of techniques for dropping water or chemicals on fires. Specially designed airplane tankers were used. (M. N. Nelson, "Air Attack of Forest Fires," Society of American Foresters, Proceedings, 1957, pp. 177-179.)

1956. The Rural Areas Development Program was initiated by the U.S. Department of Agriculture on a pilot, or demonstration, basis in a few counties. (Joseph C. Doherty, "Rural America in Transition," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 585-589.)

1956. Gibberellic acid, a plant-growth regulator first described in Japan, was placed on the American market.

1956, April 2. The Special Milk Program was extended by the Congress and expanded to include nonprofit summer camps, orphanages, and other child-care institutions (70 Stat. 86.)

1956, May 28. The Agricultural Act of 1956 (Soil Bank) included provisions for Federal financial assistance to farmers for converting general cropland into conservation uses. (Wayne D. Rasmussen and Gladys L. Baker, "A Short History of Price Support and Adjustment Legislation and Programs for Agriculture, 1933-65," Agricultural Economics Research 18:69-78. July 1966.)

1956, August 1. The U.S. Grain Standards Act was amended to make it unlawful to sample grain improperly and to cause, or attempt to cause, the issuance of a false or incorrect certificate of grade by deceptive loading, handling, sampling, or knowingly submitting such grain for inspection (70 Stat. 780.)

1956, August 7. Legislation was approved providing for the Great Plains Conservation Program. (Warren R. Bailey, "The Great Plains in Retrospect With A View To The Future," Journal of Farm Economics 45:1092-1099. Dec. 1963.)

1957. The first commercial production of potato flakes began. (Bernard Feinberg and Merle L. Weaver, "The Many-Splendored Potato, A Marvel of Convenience," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 317-320.)

1957. The Great Plains Conservation Program (Public Law 1021) was started. (John Muehlbeier, "Land-Use Problems in the Great Plains," Yearbook of Agriculture, U.S. Dept. Agr., 1958, pp. 161-166.)

1957. A commercial model of the electronic bloodspot detector which had light filters for white-shell eggs only, was ready for testing. (William H. Elliott, "Mechanization of Handling," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 287-297.)

1957. The herringbone milking parlor was brought to the United States from New Zealand. (T. E. Hienton and J. P. Schaenzer, "Farmers Use Electricity," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 75-86.)

1957, March 25. The Rome Treaty, establishing the European Economic Community and the European Atomic Community, was signed. (Abe S. Tuinman, "The European Economic Community and Its Agricultural Policy," Journal of Farm Economics 45:974-982. Dec. 1963.)

1957, August 28. The Poultry Production Inspection Act required Federal inspection of all poultry products in interstate commerce. The act became effective January 1, 1959. (Roy W. Lennartson, "What Grades Mean," Yearbook of Agriculture, U.S. Dept. Agr., 1959, pp. 344-352.)

1958. Farmers treated 92 million acres of farmland with chemicals to control insects, diseases, weeds, and brush; 21 million acres of the total were dusted or sprayed by aircraft. (Eldon W. Downs and George F. Lemmer, "Origins of Aerial Crop Dusting," Agricultural History 39:123-135. July 1965.)

1958. Screwworms, the larvae of large flies which attack cattle, were eradicated from Florida by the use of sterilized flies, a technique developed by Edward F. Knipling of the Agricultural Research Service. (Marshall Gall, "The Insect Destroyer--Portrait of a Scientist," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 54-57.)

1958. The Mediterranean fruit fly, which had originally invaded Florida in 1956, was again eradicated from Florida.

1958. A new wilt-resistant tomato, Pink Shipper, became available.

1958. Total U.S. population reached 173,435,000 (estimated); farm population, 20,827,000 (estimated); 9 percent of persons gainfully employed were engaged in agriculture.

1958, August 27. The Humane Slaughter Act was approved (72 Stat. 862.)

1958, August 28. The Agricultural Act of 1958, providing for more effective prices, production adjustments, and marketing programs for various agricultural commodities, became law (72 Stat. 988.)

1958, September 2. Public Law 85-909 amended the Packers and Stockyards Act by broadening it to apply to all stockyards, market agencies, and dealers handling livestock in interstate commerce. The amendment restricted the application of the act to packer activities in connection with livestock, meat, meat food products, poultry, and poultry products, whereas previously all packer activities had been covered. (S. T. Warrington, "Referee in the Market," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 491-497.)

1959. The Food for Peace Program was inaugurated. (Frank D. Barlow, Jr., "U.S. Food Aid Programs," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 282-287.)

1959. Experiments were conducted in cultivating row crops with an automatically steered tractor. (Kenneth K. Barnes and Paul E. Strickler, "Management of Machines," Yearbook of Agriculture, U.S. Dept. Agr., 1960, pp. 346-354.)

1959. The first mechanical harvester for cherries was introduced. (Norman E. Roberts, "Tree Shaker Saves Our Cherry Pies," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 84-87.)

1959. The mechanical tomato harvester was developed at Davis, California. (Wayne D. Rasmussen, "Advances in American Agriculture: The Mechanical Tomato Harvester as a Case Study," Technology and Culture 9:531-543. Oct. 1968.)

1959, March 24. A "Program for the National Forests," a comprehensive long-term plan for improvement and development of public forests, was submitted to the Congress by the Secretary of Agriculture. (U.S. Department of Agriculture. Forest Service. Program for the National Forests. U.S. Dept. Agr., Misc. Pub. No. 794. Washington, D.C.: GPO, 1959. 25. pp.)

1959, September 21. Legislation was approved authorizing the Secretary of Agriculture to carry out a food stamp program. (Ross B. Talbot, "Farm Legislation in the 86th Congress," Journal of Farm Economics 43:582-605. Aug. 1961.)

1960. W. F. Buchele, an agricultural engineer at the Iowa Agricultural Experiment Station, invented a giant hay baler. (Kenneth K. Barnes and James H. Anderson, "If You Enjoy Eating, Thank the Machines!," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 201-212.)

1960. Cubing or wafering machines revolutionized hay handling. (James L. Butler, "Winning The Race To Get The Hay In," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 52-57.)

1960. The National Grange had 394,069 family memberships, and the American Farm Bureau Federation had 1,600,792. In 1956, the National Farmers' Union had 278,216 family memberships. (Robert L. Tontz, "Memberships of General Farmers' Organizations, United States, 1874-1960," Agricultural History 38:143-156. July 1964.)

1960. Productivity gains and mechanization in American agriculture reduced the number of gainfully employed farmers by half in a 20-year period, while farm output increased by more than 50 percent. (Jack Baranson, "The Challenge of Underdevelopment." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. pp. 516-531.)

1960. U.S. land under irrigation reached 33,829,000 acres.

1960. The U.N. Food and Agriculture Organization (FAO) launched a worldwide Freedom from Hunger campaign. (Food and Agriculture Organization of the United Nations. Freedom from Hunger Campaign: Possibilities of Increasing World Food Production. Basic No. 10 Study. Rome, Italy: Food and Agriculture Organization of the United Nations, 1963. 231 pp., index.)

1960, January 29. The American Agricultural Marketing Association was incorporated under the cooperative laws of Illinois. (Harold J. Hartley, "Organizational Processes for Collective Bargaining in Agriculture," Journal of Farm Economics 46:1274-1276. Dec. 1964.)

1960, June 12. The Multiple Use and Sustained Yield Act was passed by the Congress in response to the need to make more effective use of public forest lands. (Perry R. Hagenstein, "Forestry, Public Pressures and Economic Development," American Journal of Agricultural Economics 53:887-893. Dec. 1971.)

1961. Emerald crownvetch, discovered by a U.S. Department of Agriculture plant exploration team in southeastern Russia, was introduced into the Midwest.

1961. A Food for Peace office was established in the White House by Executive order.

1961. Gaines variety wheat was released in the Pacific Northwest.

1961. January 21. Orville Lothrop Freeman (May 9, 1918-) of Minnesota served as Secretary of Agriculture from January 21, 1961 to January 20, 1969. (Edward L. and Frederick H. Schapsmeier. Encyclopedia of American Agricultural History. Westport, Conn.: Greenwood Press, 1975. 467 pp., index.)

1961, January 21. The President directed the Secretary of Agriculture to expand and improve the program of food distribution to needy people. (U.S. Department of Agriculture. Food and Agriculture: A Program for the 1960's. Washington, D.C.: GPO, Mar. 1962. 54 pp.)

1961, March 22. The Feed Grain Act was approved. (Arthur J. Thompson, "Farmers as Committees," Yearbook of Agriculture, U.S. Dept. Agr., 1962, pp. 557-560.)

1961, April 3. The Statistical Reporting Service was established in the U.S. Department of Agriculture and assigned the functions of the former Agricultural Estimates and Statistical Standards Division, the Market Surveys Branch of the Market Development Research Division, and the Crop Reporting Board of the Agricultural Marketing Service. Prior to a reorganization in 1953, agricultural estimating work had been carried out in the Bureau of Agricultural Economics (from 1922 to 1939 and from 1942 to 1953); from 1939 to 1942 this function had been assigned to the Agricultural Marketing Service. (U.S. Department of Agriculture. The Story of U.S. Agricultural Estimates. U.S. Dept. Agr., Misc. Publ. No. 1088. Washington, D.C.: GPO, Apr. 1969. 137 pp.)

1961, April 3. The Economic Research Service was established (Sec. Memo. 1446, Supp. 1) in the U.S. Department of Agriculture. The functions transferred from the Agricultural Marketing Service and the Agricultural Research Service had been assigned to the Bureau of Agricultural Economics prior to the reorganization of 1953. (Gladys L. Baker, and

Wayne D. Rasmussen, "Economic Research in the Department of Agriculture: A Historical Perspective," Agricultural Economics Research 27:54-74. July-Oct. 1975.)

1961, April 9. The Museum of the Great Plains was officially dedicated. (R. Halliburton, Jr., "Museum of the Great Plains," Agricultural History 35:159-161. July 1961.)

1961, May. The President authorized inauguration of an experimental Food Stamp Program and established eight pilot projects. (Howard P. Davis, "USDA Food Distribution Has Long History of Special Roles," Agricultural Marketing 8:29-31. May 1963.)

1961, May 1. The Area Redevelopment Act was approved. (Forest G. Hill, "Regional Planning and Development." In: Melvin Kranzberg and Carroll W. Pursell, Jr. Technology in Western Civilization. Vol. II. New York: Oxford University Press, 1967. Pp. 449-461.)

1961, June 5. The title of the Commodity Stabilization Service was changed to Agricultural Stabilization and Conservation Service. Organizational changes were made to incorporate the functions transferred by the Secretary of Agriculture under authority of Reorganization Plan II of 1953. (U.S. Department of Agriculture. Agricultural Stabilization and Conservation Service. Operations and Accomplishments, 1961-1968. Washington, D.C.: GPO, Dec. 1968. 231 pp.)

1961, August 8. The Agricultural Act of 1961 was approved. It established programs for the 1962 wheat and feed grain crops, authorized marketing orders for several farm commodities and the Special Milk Program, and extended Public Law 480. (Don F. Hadwiger and Ross B. Talbot. Pressures and Protests: The Kennedy Farm Program and the Wheat Referendum of 1963. San Francisco, Calif.: Chandler Publishing Co., 1965. 325 pp., index.)

1961, September 22. The Congress established the U.S. Peace Corps. (Cannon C. Hearne and others, "Sharing Our Knowledge," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 518-522.)

1961, September 30. The Organization for Economic Cooperation and Development was established, which replaced the Organization for European Economic Cooperation. (William G. Finn, "OECD and OEEC," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 449-457.)

1962-65. Agriculture prospered, partially resulting from the demands of the Vietnam War.

1962. The U.S. Department of Agriculture developed and adopted a grading system for farmers' stock peanuts. (Calvin Golumbic, "Maintaining Quality of Farm Crops," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 290-302.)

1962. The International Rice Research Institute was established in the Philippine Islands by the Rockefeller and Ford Foundations, and within a few years, it developed rice strains capable of doubling the yield of most local rices in Asia. (Lester R. Brown. Seeds of Change. New York: Praeger Publishers, 1970. 205 pp., index.)

1962. The National School Lunch Act was amended to relate allotment of cash funds to pupil participation, to authorize an appropriation to provide special assistance for lunch programs in needy schools, and to extend the program to American Samoa, Guam, Puerto Rico, and the Virgin Islands. (Florence Robin. Their Daily Bread: A Study of the National School Lunch Program. Atlanta, Ga.: McNelley Rudd Printing Service, Inc., Apr. 1968. 135 pp.)

1962, March 15. The Consumers Advisory Council was established by the Council of Economic Advisers as directed by the President in his "Message on Consumers' Protection and Interest Program." (L. B. Fletcher, "Evolving Public Policy Issues in Food Marketing," Journal of Farm Economics 45:1256-1266. Dec. 1963.)

1962, March 23. The Library of the U.S. Department of Agriculture became the National Agricultural Library. (The National Agricultural Library. The National Agricultural Library: A Chronology of its Leadership and Attainments 1839-1973. Beltsville, Md.: The Associates of the National Agricultural Library, Inc., 1974. 17 pp.)

1962, May 24-25. A White House Conference on Conservation was held. (Walter W. Heller, Chairman. White House Conference on Conservation: Official Proceedings. Washington, D.C.: GPO, 1963. 103 pp., index.)

1962, August-September. The National Farmers Organization withheld major farm products from the market. (John T. Schlebecker, "The Great Holding Action: The NFO in September, 1962," Agricultural History 39:204-213. Oct. 1965.)

1962, September 5. Congress approved the extension of the International Wheat Agreement (76 Stat. 434.)

1962, September 27. The Food and Agriculture Act of 1962 was approved (76 Stat. 605.)

1962, October 11. The Trade Expansion Act of 1962 was approved. (Irwin R. Hedges, "The Trade Expansion Act," Yearbook of Agriculture, U.S. Dept. Agr., 1964, pp. 379-391.)

1963. The Purdue University research team of Oliver E. Nelson, Edwin T. Mertz, and Lynn Bates produced the first evidence of large genetic differences in amino acid composition of cereal protein, thereby making possible the improvement of the nutritional quality of cereal protein. (Virgil A. Johnson, "Better Cereals Sought in Fight Against World Hunger Problem," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 326-330.)

1963, February 14. The President, in a message on youth to the Congress, proposed the establishment of a Youth Conservation Corps. (Warren G. Magnuson. "Forestry's Role in Youth Conservation," American Forests 70:12-14. Aug. 1964.)

1963, May 20. The Feed Grain Act of 1963 permitted continuation in 1964-65, with modifications, of previous legislation (77 Stat. 44.)

1963, May 21. Wheat producers rejected a mandatory acreage control plan.

1963, June 4-18. The World Food Congress met. (Food and Agriculture Organization of the United Nations. Summary of Proceedings on Agriculture of the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas. Washington, D.C.: World Food Congress, June 4-18, 1963. 387 pp.)

1963, November 18. The Cooperative State Research Service in the U.S. Department of Agriculture succeeded the Cooperative State Experiment Station Service.

1963, December 13. Congress extended the Mexican farm labor program to December 31, 1964 (77 Stat. 363.)

1964. The first monitoring program to determine effects of the normal use of pesticides was set up as a pilot project in the Mississippi River Delta by the U.S. Department of Agriculture. (Joseph W. Gentry, "Monitoring Farm Use of Pesticides," Yearbook of Agriculture, U.S. Dept. Agr., 1966, pp. 322-328.)

1964, February 17. The United States signed an agreement with Australia and New Zealand to limit the export of beef, veal, and mutton to U.S. markets.

1964, March 20. President Johnson nominated Mrs. Dorothy H. Jacobson to be Assistant Secretary of Agriculture for International Affairs. She was the first woman to serve on a Secretary of Agriculture's staff and, as an Assistant Secretary, she held the highest rank of any woman in the U.S. Department of Agriculture's history.

1964, April 11. The Agricultural Act of 1964 was approved, establishing voluntary cotton and wheat programs (78 Stat. 173.)

1964, June. The first field test of devices for an automated irrigation system was accomplished by Howard R. Haise, water management investigations leader for Agricultural Research Service, Fort Collins, Colorado, and Agricultural Research Service Engineers E. G. Kruse and N. A. Dimick at the Irrigation and Dryland Field Station, Newell, South Dakota. (Chester E. Evans, "Everything Is Automated These Days--Even Water," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 115-121.)

1964, July 3. The Congress established a National Commission on Food Marketing to study effects of concentration of retail food business, vertical integration, and chain store practices. (National Commission on Food Marketing. Food from Farmer to Consumer. Report. Washington, D.C.: GPO, June 1966. 203 pp.)

1964, August 20. The President approved the Economic Opportunity Act of 1964, authorizing special programs to combat rural poverty. (President's National Advisory Commission on Rural Poverty. The People Left Behind. A Report by the President's National Advisory Commission on Rural Poverty. Washington, D.C.: GPO, Sept. 1967. 160 pp.)

1964, August 22. The Tariff Act of 1930 was amended to provide for the free importation of certain wild animals and to provide for the imposition of quotas on certain meat and meat products (78 Stat. 594.)

1964, August 31. The President approved a nationwide Food Stamp Act. (Harold G. Love, "The Reasons Participants Drop Out of the Food Stamp Program: A Case Study and Its Implications," American Journal of Agricultural Economics 52:387-394. Aug. 1970.)

1964, September 3. The Wilderness Act provided for the establishment of a National Wilderness Preservation System. (Glen O. Robinson. The Forest Service. Published for Resources for the Future, Inc. Baltimore, Md.: The Johns Hopkins University Press, 1975. 337 pp., apps., index.)

1964, October 8. The Agricultural Trade Development and Assistance Act of 1954 (Public Law 480) was amended and extended (78 Stat. 1035.)

1964, December 31. Federal authorization for the importation of foreign agricultural workers was allowed to expire. (Peter Matthiessen. Sal Si Puedes: Cesar Chavez and the New American Revolution. New York: Random House, 1969. 372 pp., index.)

1965. The Water Resources Planning Act was established. (Gary D. Cobb, "Evolving Water Policies in the United States," American Journal of Agricultural Economics 55: 1003-1007. Dec. 1973.)

1965. The American Soybean Association Research Foundation was established. (Robert W. Howell, "Golden Beans From China Now Our No. 1 Cash Crop," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 225-236.)

1965. Rural poor numbered 14 million, of whom 4 million were living on farms. Of the rural poor, 11 million were white and 3 million were black. (President's Advisory

Commission on Rural Poverty. The People Left Behind. A Report by the President's National Advisory Commission on Rural Poverty. Washington, D.C.: GPO, Sept. 1967. 160 pp.)

1965, February 8. The Consumer and Marketing Service in the U.S. Department of Agriculture replaced the Agricultural Marketing Service. (U.S. Department of Agriculture. Consumer and Marketing Service. This is USDA's Consumer and Marketing Service. U.S. Dept. Agr., Consumer and Marketing Service, PA-661. Washington, D.C.: GPO, 1965. 31 pp.)

1965, February 24. The Rural Community Development Service was established in the U.S. Department of Agriculture. (U.S. Department of Agriculture. Secretary's Memorandum No. 1570. Feb. 24, 1965.)

1965, February 27. Commission on Civil Rights issued a report on equal opportunity in farm programs. (A Report of the United States Commission on Civil Rights. Equal Opportunity in Farm Programs: An Appraisal of Services Rendered by Agencies of the United States Department of Agriculture. Washington, D.C.: GPO, 1965. 136 pp.)

1965, March 9. The Appalachian Regional Development Act of 1965 was approved. (Monroe Newman and Eli P. March, "Rural Areas in an Urban Economy," Journal of Farm Economics 51:1097-1109. Dec. 1969.)

1965, July 22. The Water Resources Planning Act, which included the U.S. Department of Agriculture in the Federal Water Council, was approved. (Harry A. Steele, "Economic Considerations in Formulation of Natural Resource Policies," Journal of Farm Economics 48:1232-1238. Dec. 1966.)

1965, November 3. The Food and Agriculture Act of 1965 was approved with the goal of encouraging farmers to adjust production between various crops. (Orville L. Freeman. World Without Hunger. New York: Frederick A. Praeger, 1968. 190 pp., index.)

1965, November 4. The President established the National Advisory Commission on Food and Fiber. (National Advisory Commission on Food and Fiber. Food & Fiber for the Future. Report of the National Advisory Commission on Food and Fiber. Washington, D.C.: GPO, 1967. 361 pp., index.)

1966. An amendment to the Fair Labor Standards Act extended coverage to agricultural workers. (Theodore P. Lianos, "Impact of Minimum Wages Upon the Level and Composition of Agricultural Employment," American Journal of Agricultural Economics 54:477-484. Aug. 1972.)

1966. Fortuna, the first rust and sawfly resistant wheat, was released to farmers as a result of research conducted by the U.S. Department of Agriculture and the North Dakota Agricultural Experiment Station. (Paul Gough, "Natural Enemies Used to Fight Insect Ravages," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 99-104.)

1966. The Child Nutrition Act permitted the U.S. Department of Agriculture to help support the school breakfast and dinner programs. (U.S. Department of Agriculture. Agricultural Research Service. Toward The New: A Report on Better Foods and Nutrition From Agricultural Research. U.S. Dept. Agr., Agr. Res. Serv., Agr. Inf. Bull. No. 341. Washington, D.C.: GPO, 1970. 60 pp.)

1966, January 25. The President recommended legislation to provide Federal assistance for rural development districts.

1966, June 21. The development of high Lysine corn, bred to enhance protein values of the grain, was announced. The Agency for International Development (AID) let a contract for the development of a similar type of wheat in August 1966.

1966, July 13. The Cotton Research and Promotion Act was approved (80 Stat. 279.)

1966, September 19. The Foreign Assistance Act of 1966 was approved (80 Stat. 795.)

1966, September 28. The President's National Advisory Commission on Rural Poverty was established. (President's National Advisory Commission on Rural Poverty. The People Left Behind. A Report by the President's National Advisory Commission on Rural Poverty. Washington, D.C.: GPO, Sept. 1967. 160 pp.)

1966, November 3. The Fair Packaging and Labeling Act, commonly known as "Truth in Packaging," was passed. (D. I. Padberg, "Emerging Effectiveness of Competition and the Need for Consumer Protection," American Journal of Agricultural Economics 57:196-205. May 1975.)

1967, May 8. The Packers and Stockyards Administration was established. The functions of the Administration had been previously assigned to the Consumer and Marketing Service. (U.S. Congress. House Committee on Appropriations. Hearings on . . . Department of Agriculture and Related Agencies Appropriations for 1968. Part 3. 90th Cong., 1st sess., Washington, D.C.: GPO, 1967. Pp. 664-665.)

1967, May 17. The largest and most modern wholesale produce market ever constructed was dedicated at Hunts Point, Bronx, New York. (Kenneth H. Brasfield, "World's Largest Market Joins the Jet Age," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 130-135.)

1967, July 7. The first successful gyroscopically stabilized land vehicle was unveiled to the public. It was a trail vehicle that could pack four times as much as a mule on a forest trail. (Ira C. Funk, "Gyro Trail Hauler Makes Mules Blush," Yearbook of Agriculture, U.S. Dept. Agr., 1968, pp. 190-193.)

1967, December 15. The Wholesome Meat Act was approved. (U.S. Congress. House Committee on Agriculture. Agricultural Legislation in the 90th Congress. 90th Cong., 2d sess., Committee Print. Washington, D.C.: GPO, 1968. 66 pp.)

1968. Ninety-six percent of all cotton was being harvested mechanically.

1968, July 1. The International Grains Agreement was put into force for a 3-year period; it replaced the International Wheat Agreement. (Carmen O. Nohre, "Special Trade Arrangements," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 263-271.)

1969. The Tax Reform Act, which included a number of provisions relating to agriculture, was passed. (Hoy F. Carman, "Tax Loss Agricultural Investments After Tax Reform," American Journal of Agricultural Economics 54:627-634. Nov. 1972.)

1969. Informal surveys showed that most farmers retained traditional agrarian values. (W. D. Rasmussen and Gladys L. Baker, "The Farmer Speaks for a Way of Life," Yearbook of Agriculture, U.S. Dept. Agr., 1970, pp. 25-31.)

1969, January 21. Clifford Morris Hardin (October 9, 1915-) of Nebraska served as Secretary of Agriculture from January 21, 1969 to November 17, 1971. (Wayne D. Rasmussen and Gladys L. Baker. The Department of Agriculture. New York: Praeger Publishers, 1972. 257 pp., apps., biblio., index.)

1969, March 28. The Export Marketing Service was established in the U.S. Department of Agriculture. (U.S. Congress. House Hearings on Department of Agriculture Appropriations for 1971. Part 4. 91st Cong., 2d sess. Washington, D.C.: GPO, 1970. Pp. 547-552.)

1969, August 8. The Food and Nutrition Service was established in the U.S. Department of Agriculture. (U.S. Congress. House Committee on Appropriations. Hearings on

Department of Agriculture Appropriations for 1971. Part 2. 91st Cong., 2d sess. Washington, D.C.: GPO, 1970. Pp. 553-554.)

1969, December. The White House Conference on Food, Nutrition, and Health convened to move ahead on a new national policy on food and nutrition. (White House Conference on Food, Nutrition and Health. Final Report. Washington, D.C.: GPO, 1970. 341 pp., index.)

1969, December 1. The Foreign Economic Development Service was established in the U.S. Department of Agriculture. (34 F.R. 19149.)

1970. Approximately 70 percent of corn produced in the 5 principal Corn Belt States was harvested by combines equipped with corn heads. (No author. "Machinery Management," Successful Farming, June-July 1971.)

1970, March 12. The National School Lunch Act was amended to provide funds and authority to the U.S. Department of Agriculture for the purpose of providing free or reduced-price meals to needy children not formerly reached (84 Stat. 51.)

1970, August 13. An act establishing the Youth Conservation Corps as a pilot program in the U.S. Departments of Interior and Agriculture was approved (84 Stat. 794.)

1970, September 26. The Wheat Research and Promotion Act was approved (84 Stat. 885.)

1970, November 30. The Agricultural Act was passed initiating a cropland set-aside program for producers of wheat, feed grains, and upland cotton. (H. S. Houthakker, "Domestic Farm Policy and International Trade," American Journal of Agricultural Economics 53:762-766. Dec. 1971.)

1970, December 9. The Horse Protection Act which stopped cruel practices was approved (84 Stat. 1404.)

1970, December 24. The Plant Variety Protection Act was passed. (Bill Pardee, "New Seed Legislation," American Agriculturist 173:64-68. Feb. 1976.)

1970, December 29. The Egg Products Inspection Act was approved (85 Stat. 1620.)

1971, January 11. The Food Stamp Act of 1964 was amended to make the program available to more people (84 Stat. 2048.)

1971, September 3. The Rural Development Service was established in the U.S. Department of Agriculture. The Service was responsible for the coordination and planning of rural development programs and for handling the proposed revenue sharing program for rural development. (36 F.R. 19519.)

1971, October 31. The Animal and Plant Health Service was established in the U.S. Department of Agriculture. It was responsible for the regulatory and control programs relating to diseases and pests of animals and plants that were previously carried out by the Agricultural Research Service.

1971, December 2. Earl L. Butz (July 3, 1909-) of Indiana served as Secretary of Agriculture from December 2, 1971 to October 4, 1976.

1971, December 10. A new Farm Credit Act was approved. (85 Stat. 583.)

1972, August 30. The Rural Development Act was approved. (John S. Bottum, "Non-Local Funding of Rural Public Services," American Journal of Agricultural Economics 56:953-958. Dec. 1974.)

1973, August 10. The Agriculture and Consumer Protection Act was approved. (Quentin M. West and others, "Economists and the Agriculture and Consumer Protection Act," North Dakota Law Review 50:313-328. Winter 1974.)

1974. The average farm size increased from 174 acres in 1940 to 385 acres in 1974. (Joe M. Bohlen and others, "Main Street Pokes Along While Urban Areas Boom," Yearbook of Agriculture, U.S. Dept. Agr., 1975, pp. 55-64.)

1974. The U.S. Sugar Act expired. (Fred Gray, "The Not-So-Sweet Sugar Story." In: The Farm Index. U.S. Dept. Agr., Washington, D.C.: GPO, 1975. Pp. 20-21.)

1974. Early in the year, American consumer food prices were 25 percent greater than 2 years earlier; farm corn prices were double and wheat prices triple those in early 1972. (L. P. Shertz, "World Food: Prices and the Poor," Foreign Affairs 52:511-537. Apr. 1974.)

1975. A new hard winter wheat variety, Lancota, was developed by the Agricultural Research Service and the Nebraska Agricultural Experiment Station in Lincoln to improve the nutritional value of wheat.

1975. The Agricultural Research Service announced a formula for a protein-rich, sugar-less bread, developed at the Grain Marketing Research Center, in cooperation with the Kansas Agricultural Experiment Station. (Agricultural Research 23:8-9. Apr. 1975.)

1975, January 3. The Federal Noxious Weed Act was approved (88 Stat. 2148.)

1976. Crystalline sugar was produced from sweet sorghum through a cooperative research effort by the Agricultural Research Service, Texas A & M University Agricultural Experiment Station, and Rio Grande Valley sugar growers. (Agricultural Research, 24:3-4. Aug. 1976.)

1976, May 28. The Beef Research and Information Act was approved. It enabled cattle producers to establish, finance, and carry out a coordinated program of research, producer and consumer information, and promotion for improving, maintaining, and developing markets for cattle beef and beef products (90 Stat. 529.)

1976, October 4. John A. Knebel (October 4, 1936-) of Oklahoma served as Acting Secretary until he was appointed Secretary of Agriculture on November 4, 1976; he left office on January 20, 1977. (Weekly Compilation of Presidential Documents. Vol. No. 12, 45, p. 1676. Nov. 8, 1976.)

1976, October 4. The Tax Reform Act of 1976 was signed providing for the amendment or repeal of certain provisions of the Internal Revenue Code of 1954 (90 Stat. 1521.) (Charles A. Sisson. Provisions of Importance to Agriculture in the Tax Reform Act of 1976. ERS-645. U.S. Dept. Agr., Econ. Res. Serv. Washington, D.C., November 1976. 19 pp.)

1976, October 8. The Farmer-to-Consumer Direct Marketing Act of 1976 was approved to encourage direct marketing of agricultural commodities from farmers to consumers (90 Stat. 1982.)

1976, October 19. The Congress changed the title of Under Secretary to Deputy Secretary of Agriculture, and it authorized an additional Assistant Secretary of Agriculture (90 Stat. 2643.)

1976, October 21. The U.S. Grain Standards Act of 1976, which improved the inspection and weighing of grain, was approved (90 Stat. 2867.)

1976, October 21. The Homestead Act, the act of May 3, 1891, and many other land laws were repealed by the Federal Land Policy and Management Act. For the homestead laws affecting Alaska, the repeal was to be effective 10 years later (90 Stat. 2743.)

1977, January 23. Bob Bergland (July 22, 1928-) of Minnesota was appointed Secretary of Agriculture. (Don Muhm, "Closeup: A Look at Robert S. Bergland," Des Moines Sunday Register, Section F:1. Jan. 2, 1977.)

1977, August. A mechanical lettuce harvester was field tested in California. (W. H. Friedland and others. Manufacturing Green Gold. Davis, Calif.: University of California-Davis. July 1978.)

1977, September 29. The Food and Agriculture Act of 1977 was passed which provided price and income protection for farmers and assured an abundance of food and fiber at reasonable prices to consumers (91 Stat. 913.)

1977, October 5. Secretary of Agriculture Bob Bergland announced a reorganization of the U.S. Department of Agriculture, which included elimination of 14 agencies by blending them into new or larger existing units. (U.S. Department of Agriculture, Office of the Secretary, Secretary's Memo. No. 1927, Supp. 1, Dec. 19, 1977.)

1977, December 14. A new farm group, the American Agriculture Movement, called for a national strike by farmers for better prices. Members rallied to support the strike with a parade of farmers, livestock, and tractors. (W. D. Rasmussen, "A Bleak History for Striking Farmers." In: Farm Index. U.S. Dept. Agr., Washington, D.C.: GPO, Jan. 1978. Pp. 12-14.)

1977, December 23. The Economics, Statistics, and Cooperatives Service was established by the Secretary of Agriculture. The former Economic Research Service, Statistical Reporting Service, Farmer Cooperative Service, and Economic Management Support Center were consolidated to form the new agency. (Penelope C. Cate, "The United States Department of Agriculture and Its Leaders," staff report. U.S. Dept. Agr., Econ., Stat., Coop. Serv., Sept. 1978. 25 pp.)

1978. A new process for commercial tomato peeling, using a heat-cool sequence, proved successful. (H. G. Hass, ed., "Heat-Cool Sequence Removes Tomato Peels," Agricultural Research. Jan. 1978: 11.)

1978. Cryotherapy, a quick, painless freezing technique proved successful in treating malignant cancer in swine and other animals. (H. G. Hass, ed., "New Treatment for Malignant Tumors in Animals," Agricultural Research. Oct. 1978: 6-7.)

1978. A new method was developed for direct extraction of peanuts that could be ground into a bland, white flour with high-protein solubility. (H. G. Hass, ed., "High Protein Peanut Flour," Agricultural Research. May 1978: 5.)

1978. A new variety of soybeans named Elf was released cooperatively by the U.S. Department of Agriculture and the Illinois and Ohio State Agricultural Experiment Stations. (H. G. Hass, ed., "New Semi-Dwarf Soybeans," Agricultural Research. Apr. 1978: 5.)

1978, January 24. Three U.S. Department of Agriculture agencies--Agricultural Research Service, Cooperative State Research Service, and Extension Service--were merged with the National Agricultural Library into a new organization, the Science and Education Administration (43 F.R. 3254.) The agency's new program responsibilities are contained in the National Agricultural Research, Extension and Teaching Act of 1977. (91 Stat. 981-1019; 7 U.S.C. 3101-3316.)

1978, January 31. Secretary of Agriculture Bob Bergland declared the United States free of hog cholera after 99 years of research and 17 years of a Federal-State eradication campaign. (Walter W. Martin, "Hog Cholera Eradicated. . . A Case History," Agricultural Research. Mar. 1978: 8-12.)

1978, May 15. The Emergency Assistance Act of 1978 was approved providing assistance to wheat, feed grain, and upland cotton producers. (Wayne D. Rasmussen and Gladys L. Baker. Price-Support and Adjustment Programs From 1933 Through 1978: A Short History. Agr. Inf. Bull. No. 424. U.S. Dept. Agr., Econ., Stat., Coop. Serv., 1979. 32 pp.)

1978, September 5. The Presidential Commission on World Hunger was established by Executive Order 13078 (43 F.R. 39741).

1978, September 27. The Secretary of Agriculture was appointed a member of the Energy Coordinating Committee established by Executive Order 12083 (43 F.R. 44813).

1979. A new, high-yield variety of soft, white winter wheat--the type grown largely in New York--was named "Purcell" wheat after Robert W. Purcell, retired chairman of Cornell's Board of Trustees and a Presidential Councillor.

1979, February 5. An American Agriculture Movement tractorcade of farmers, most of whom were grain producers, arrived in Washington to lobby Congress and the Administration for higher prices. (Robert J. Samuelson, "Frustrations of the Farmers," National Journal. Feb. 17, 1979: 272.)

1979, March 12. Secretary of Agriculture Bob Bergland proposed a full-scale national dialogue on the future of American agriculture with an emphasis on developing a workable policy on the structure of U.S. agriculture. (U.S. Department of Agriculture, Office of the Secretary, Press Release, Mar. 12, 1979. 13 pp.)

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